Acer V193

Service Guide

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Conventions

The following conventions are used in this manual:

Screen messages	Denotes actual messages that appear on screen
Note	Gives bits and pieces of additional information related to the current topic.
Warning	Alerts you to any damage that might result from doing or not doing specific actions.
Caution	Gives precautionary measures to avoid possible hardware or software problems.
Important	Reminds you to do specific actions relevant to the accomplishment of procedures.

Preface

Before using this information and the product it supports, please read the following general information.

1. this Service Guide provides you with all technical information relating to the BASICCONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.
2. please not WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide, for ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and Service of customer machines.

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WARNING: (FOR FCC CERTIFIED MODELS)

NOTE: this equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception,

Which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Warning

Use only shielded signal cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

As an ENERGY STAR® Partner our company has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

WARNING:

To prevent fire or chock hazard, do not expose the monitor to rain or moisture. Dangerously high voltages are present inside the monitor. Do not open the cabinet. Refer servicing to qualified personnel only.

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PRECAUTIONS

- Do not use the monitor near water, e.g. near a bathtub, washbowl, kitchen sink, laundry tub, Swimming pool or in a wet basement.

- Do not place the monitor on an unstable trolley, stand, or table. If the monitor falls, it can injure a person and cause serious damage to the appliance. Use only a trolley or stand recommended by the manufacture or sold with the monitor. If you mount the monitor on a wall or shelf, use a mounting kit approved by the manufacture and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet area provided for ventilation. To ensure reliable operation of the monitor and to protect it from overheating, be sure these openings are not blocked or covered. Do not place the monitor on a bed, sofa, rug or similar surface. Do not place the monitor near or over a radiator or heat register. Do not place the monitor in a bookcase or cabinet unless proper ventilation is provided.
- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- The monitor is equipped with a three-pronged grounded plug, a plug with a third (grounding) pin. This plug will fit only into a grounded power outlet as a safety feature. If your outlet does not accommodate the three-wire plug, have an electrician install the correct outlet, or use an adapter to ground the appliance safely. Do not defeat the safety purpose of the grounded plug.
- Unplug the unit during a lightning storm or when it will not be used for long periods of time. This will protect the monitor from damage due to power surges.
- Do not overload power strips and extension cords. Overloading can result in fire or electric shock.
- Never push any object into the slot on the monitor cabinet. It could short circuit parts causing a fire or electric shock. Never spill liquids on the monitor.
- Do not attempt to service the monitor yourself; opening or removing covers can expose you to dangerous voltages and other hazards. Please refer all servicing to qualified service personnel.
- To ensure satisfactory operation, use the monitor only with UL listed computers which have appropriate configured receptacles marked between 100-240V AC, Min. 3.5A.
- The wall socket shall be installed near the equipment and shall be easily accessible.

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SPECIAL NOTES ON LCD MONITORS

The following symptoms are normal with LCD monitor and do not indicate a problem.

NOTES

- Due to the nature of the fluorescent light, the screen may flicker during initial use. Turn off the Power Switch and then turn it on again to make sure the flicker disappears.
- You may find slightly uneven brightness in the screen depending on the desktop pattern you use.
- The LCD screen has effective pixels of 99.99% or more. It may include blemishes of 0.01% or less such as a missing pixel or a pixel lit all of the time.
- Due to the nature of the LCD screen, an afterimage of the previous screen may remain after switching the image, when the same image is displayed for hours. In this case, the screen is recovered slowly by changing the image or turning off the Power Switch for hours.

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Chapter 1

Monitor Feature

INTRODUCTION

Scope

This specification defines the requirements for the 19” MICRO-PROCESSOR based Multi-mode supported high resolution color LCD monitor. This monitor can be directly connected to general 15 pin D-sub VGA connector and eliminates the requirement of optional special display card. It also supports VESA DPMS power management and plug & play function. There is a build-in stereo audio amplifier with volume control to drive a pair of speakers.

Description

The LCD monitor is designed with the latest LCD technology to provide a performance oriented product with no radiation. This will alleviate the growing health concerns. It is also a space saving design, allowing more desktop space, and comparing to the traditional CRT monitor, it consumes less power and gets less weight in addition MTBF target is 20k hours or more.

Comparison Chart of AV698/699 & AV898/899

	AV698/699	AV898/899
Panel	Normal 19” panel AU-M190EN04(V5)	Normal 19” panel Samsung-LTM190EX-L01
Signal Interface	DSUB	DSUB
Sync Type for analog input	Separate / compatible /	Separate / compatible /
Color Temp user adjust	Support	Support
DDC	DDC2B	DDC2B
Speaker	NO	NO
Headphone Jack	NO	NO
Microphone Jack	No	No
USB Hub	Not support	Not support
Tilt / Swivel	Yes / No	Yes / No
Height Adjust	Option	Option

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ELECTRICAL REQUIREMENTS

Standard Test Conditions

All tests shall be performed under the following conditions, unless otherwise specified.

Ambient light :	225 lux
Viewing distance :	50 cm in front of LCD panel
Warrn up time	
All specifications :	30 minutes
Fully functional :	5 seconds
Measuring Equipment :	Chroma 2250 signal generator or equivalent, directly Connected to the monitor under test. Minolta CA100 photometer, or equivalent
Control settings	
User brightness control :	Maximum (unless otherwise specified)
User contrast control:	Typical (unless otherwise specified)
User red/white balance, Green/white balance and Blue/white balance control :	In the center (unless otherwise specified)
Power input:	110Vac or 230Vac
Ambient temperature:	20 ± 5 ˚C (68 ± 9 ˚ F)
Analog input mode:	1280 x1024 /60 Hz

MEASUREMENT SYSTEMS

The units of measure stated in this document are listed below:

1 gamma = 1 nano tesla
1 tesla = 10,000 gauss
cm = in x 2.54
lb = kg x 2.2
degrees F = [°C x 1.8] + 32
degrees C = [°F - 32]/1.8
u' = 4x/(-2x + 12y + 3)
v' = 9y/(-2x + 12y + 3)
x = (27u'/4)/[(9u'/2) - 12v' + 9]
y = (3v')/[(9u'/2) - 12v' + 9]
nits = cd/(m^2) = Ft-L x 3.426
lux = foot-candle x 10.76

LCD monitor General specification

Panel Type:	19 " active matrix color TFT LCD 1). LG LM190E03-B4 2). LG LM190E03-B4N9 3). Samsung LTM190EX-L01 4). AU M190EN04 V5
Display size:	376.32mm (H) × 301.056mm(V)
Display mode:	VGA 720 × 400 (70 Hz) VGA 640 × 480 (60/66/70/72/75 Hz) SVGA 800 × 600 (60/70/72/75 Hz) XGA 1024 × 768 (60/70/75 Hz) SXGA 1280 × 1024 (60/70/75 Hz) standard resolution
Pixel pitch:	0.294mm(H) × 0.294mm(V)

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Display Dot:	1280 x (RGB) × 1024	
Pixel Clock:	25.2 – 135.0MHz	
Contrast ratio: θ = 0°	LG: 500:1 (typical)	Samsung: 700:1 (typical) AU: 550:1 (typical)
Brightness:	LG: 250 (typical)	Samsung: 300 (typical) AU: 270 (typical)
Response time (Tr/Tf):	LG	Ta=25°C, 2/10ms (typical)
	Samsung	Ta=25°C, 1.7/6.3ms (typical)
	AU	Ta=25°C, 5.6/2.4ms (typical)
Display color:	LG	16.2M color with FRC
	Samsung	16.7M
	AU	16.2M color with FRC
Viewing angle(CR>10):	LG	L / R ≧ 70 / ≧ 70
		U / D ≧ 70 / ≧ 70
	Samsung	L / R ≧ 75 / ≧ 75
		U / D ≧ 75 / ≧ 60
	AU	L / R ≧ 70 / ≧ 70
		U / D ≧ 75 / ≧ 60
Luminance Uniformity:	LG	< 1.3 (max)
	Samsung	< 25 % (max)
	AU	>70% (min)

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LCD Panel Specification

LCD Panel Model (LM190E08-TLL1)

General specification

General features

Active screen size	19.0 inches (481.9mm) diagonal
Outline Dimension	396.0(H) x 324.0(V) x 15.5(D) mm(Typ.)
Pixel Pitch	0.098*RGB(H)mm x 0.294(V)mm
Pixel Format	1280 horizontal By 1024 vertical Pixels. RGB stripe arrangement
Interface	LVDS 2Port
Color depth	16.7M colors
Luminance, white	300 cd/m^2 (Center 1Point, typ)
Viewing Angle (CR>10)	R/L 160(Typ.), U/D 160(Typ.)
Power Consumption	Total 24.0W(Typ.), (3.4W@V_{LCD} , 20.6W@Lamp [I_{BL} =7.5mA])
Weight	1950g (Typ.)
Display operating mode	Transmissive mode, normally White
Surface treatments	Hard coating (3H), Anti-glare treatment of the front polarizer

Optical specifications

Ta= 25°C, V_{LCD}=5.0V, fv=60Hz f_{CLK}=54MHz, I

Parameter0		Symbol	Values			Units
			Min	Typ	Max	
Contrast Ratio		CR	500	800	-	
Surface Luminance, white		L_{WH}	250	300	-	cd/m^2
Luminance Variation		δ_{WHITE} 9P	75			%
Response Time	Rise Time	Tr_R	-	1.3	2.6	ms
	Decay Time	Tr_D	-	3.7	7.4	ms
Color Coordinates [CIE1931]	RED	Rx	Typ -0.03	0.639	Typ +0.03	
		Ry		0.342		
	GREEN	Gx		0.297		
		Gy		0.615		
	BLUE	Bx		0.146		
		By		0.068		
	WHITE	Wx		0.313		
		Wy		0.329		
Viewing Angle (CR>5)						
	x axis, right(ϕ=0°)	θr	75	88		Degree
	x axis, left (ϕ=180°)	θl	75	88		
	y axis, up (ϕ=90°)	θu	70	85		
	y axis, down (ϕ=270°)	θd	70	85		
Viewing Angle (CR>10)						
	x axis, right(ϕ=0°)	θr	70	80		Degree
	x axis, left (ϕ=180°)	θl	70	80		
	y axis, up (ϕ=90°)	θu	60	75		
	y axis, down (ϕ=270°)	θd	70	85		

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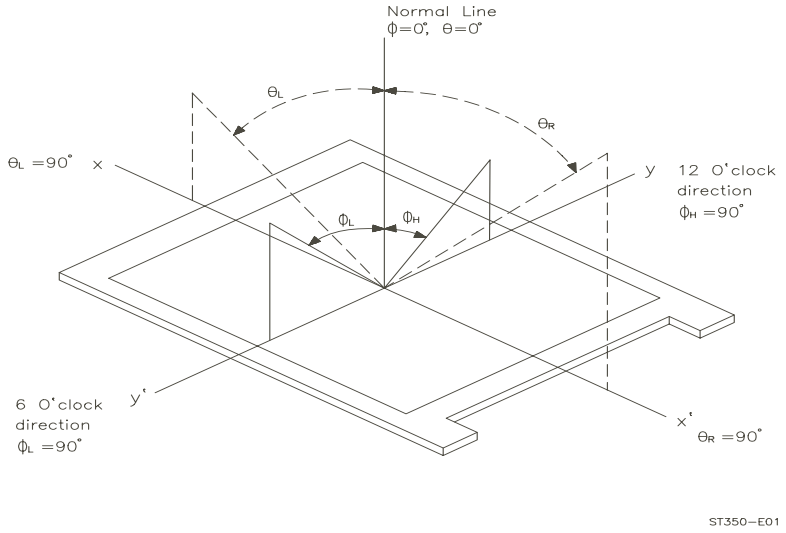
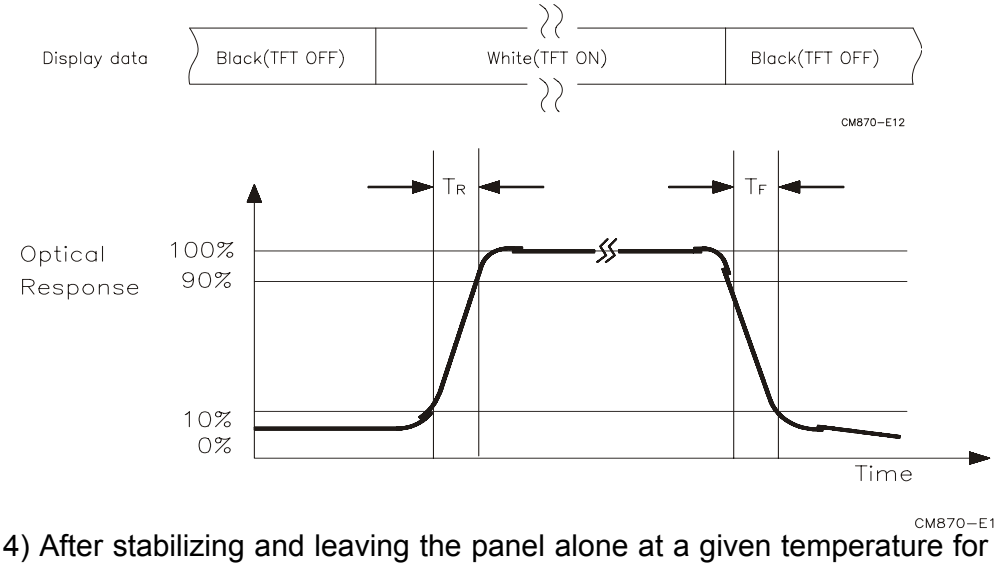
Note 1) Definition of Viewing Angle: Viewing angle range (10≤CR)



Note 2) Definition of Contrast Ratio (CR): Ratio of gray max(Gmax),gray min(Gmin) at the center point of panel.

$$CR = \frac{\text{Luminance with all pixels white (Gmax)}}{\text{Luminance with all pixels black (Gmin)}}$$

Note 3) Definition of Response time: Sum of T_R , T_F



Note 4) After stabilizing and leaving the panel alone at a given temperature for 30 min, the measurement should be executed .Measurement should be executed n a stable, windless ,and dark room.30 min after lighting the back-light. This should be measured in the center of screen. Dual lamp current :13.0mA(6.5mA x2)(Refer to the note(1) in the page 14 for more information).

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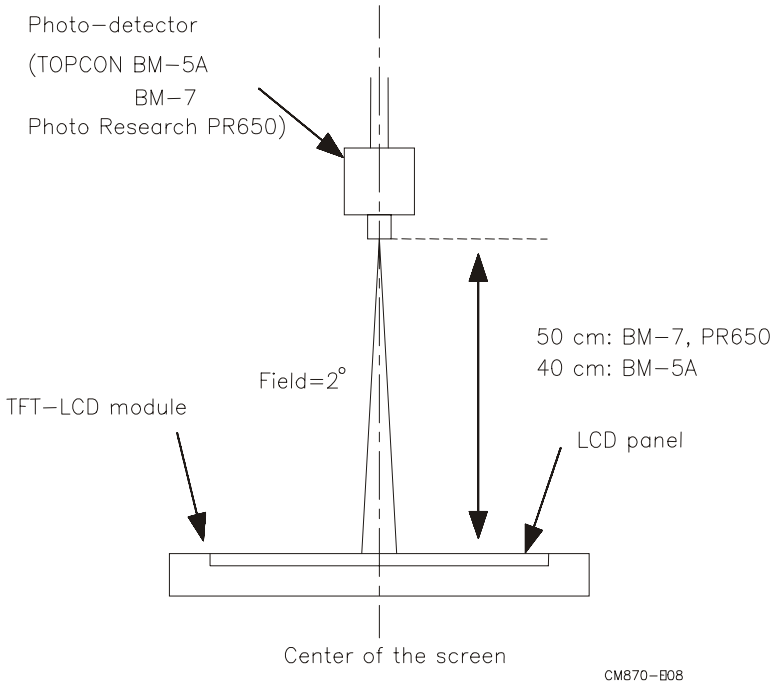
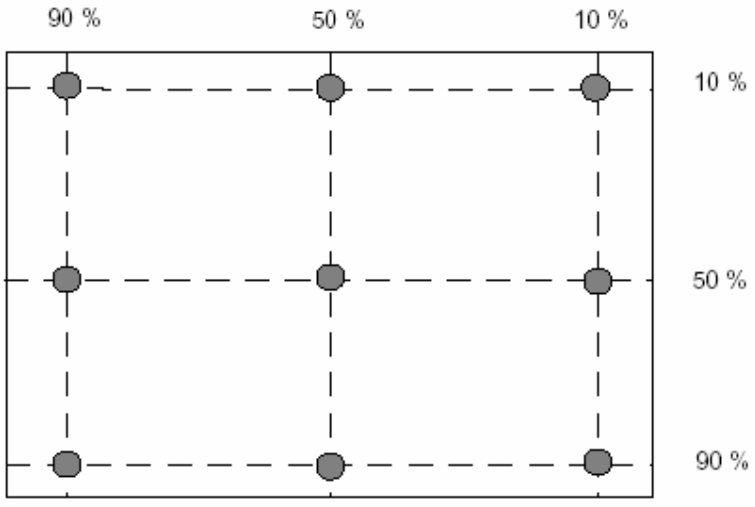
Environment condition :Ta=25±2°C



Optical characteristics measurement setup

Notes 5) Definition of Luminance of White : measure the luminance of white at center point.

Brightness uniformity of these 9 points is defined as below



Notes 6)Definition of 9 points brightness uniformity (Measuring points: Refer to the Note 5)

AU

$$B_{UNI} = \frac{B_{min}}{} \times 100\%$$

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Bmax

Samsumg

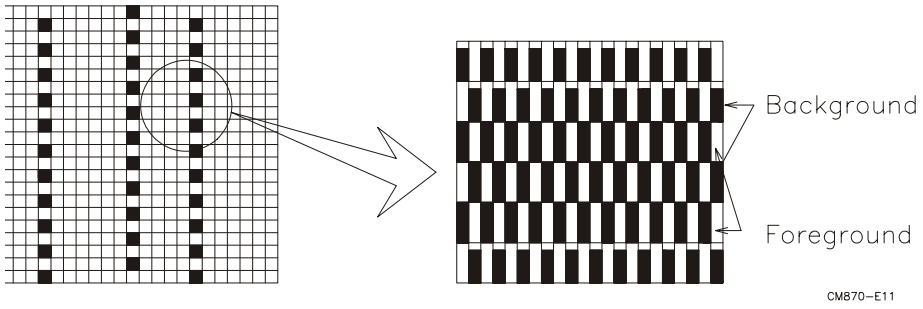
$$B_{UNI} = \frac{\text{Bmax-Bmin}}{\text{Bmax}} \text{ X } 100\%$$

Bmax: Maximum brightness
Bmin: Minimum brightness

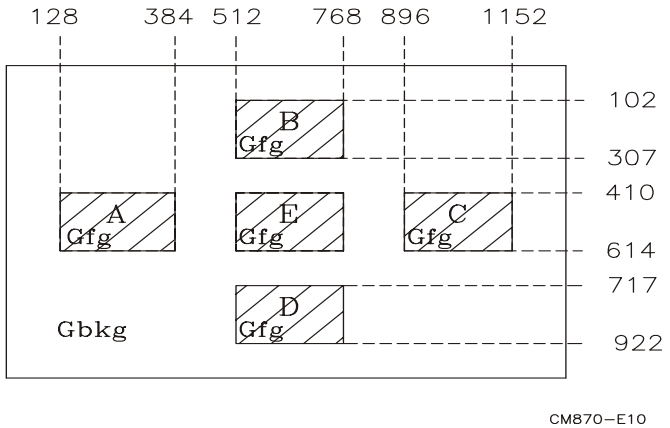
Notes 7) Definition of Flicker level

$$F = \frac{\text{Flicker Voltage}_{pp}}{\text{LMD Voltage}_{dc}} \text{ x } 100\ \%$$

- One maximum value of three estimated values.
- For this test ,an LMD(Light Measurement Device)is needed with adequate response time to track any visible rate flicker component and with a voltage level output proportional To luminance intensity.
- Test Pattern: For dot inversion Driving(Gray levels of foreground dots on the test panel Are G22,G32,and G45)
- Test Point :Center point of the display area



Note 8) Definition of Crosstalk (Refer to the VESA STD)



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The calculation for shadowing is made from the 2 luminance measurements Gbkg and Lsh, as follows:

$$C_T = \frac{Lmax - Lmin}{Lmin} \times 100\ \%$$

Where Lmax is the larger value of Gbkg or Lsh , and Lmin is the smaller of the two.

- To determine background and foreground levels (colors),first set the background to any gray scale or color level suitable for shadowing determination.(Note that it may take several iterations of adjusting background level and box levels to determine the proper value for the background .Next display the box levels to determine the proper value for the background level. Look for shadowing in any direction from box E. Independently vary the gray level (or color) of the background and box E until the worst case shadowing is observed. This defines the background (Gbkg) and foreground (Gfg) levels to be maintained for the remainder of the test.

- One point only (the target) will be measured. To determine that point proceed as follows Using the background and foreground gray levels of step1 (Gbkg and Gfg). Turn on each box at a time. Look for the case with the worst shadowing. The box causing the worst case is the shadowing source, or Bsrc. Use Bsrc and the box opposite from it that lies directly in the shadow path. That is the target box, or Btgt. Note that box Eight be either Bsrc or Btgt, depending on the shadowing conditions, but typically Bsrc and Btgt will be a pair of opposite boxes, A&C or B&D. Btgt will only be displayed for aligning the LMD. It will be turned off for the actual measurement.

- The target box point (Btgt) will be measured with the source box (Bsrc) turned on then off. (Btgt is for alignment purpose only) Display the background only at level Gbkg. Display Btgt determined in step 2 above. Using the correct distance, angle, and measurement aperture, align the LMD to the center of the Btgt. Turn off Btgt. With Gbkg set to its proper level, measure the luminance (or color). Next,turn on the source box Bsrc. Again measure at the center point of Btgt (without Btgt present.). In this case the LMD will be measuring the shadowing level, Lsh.

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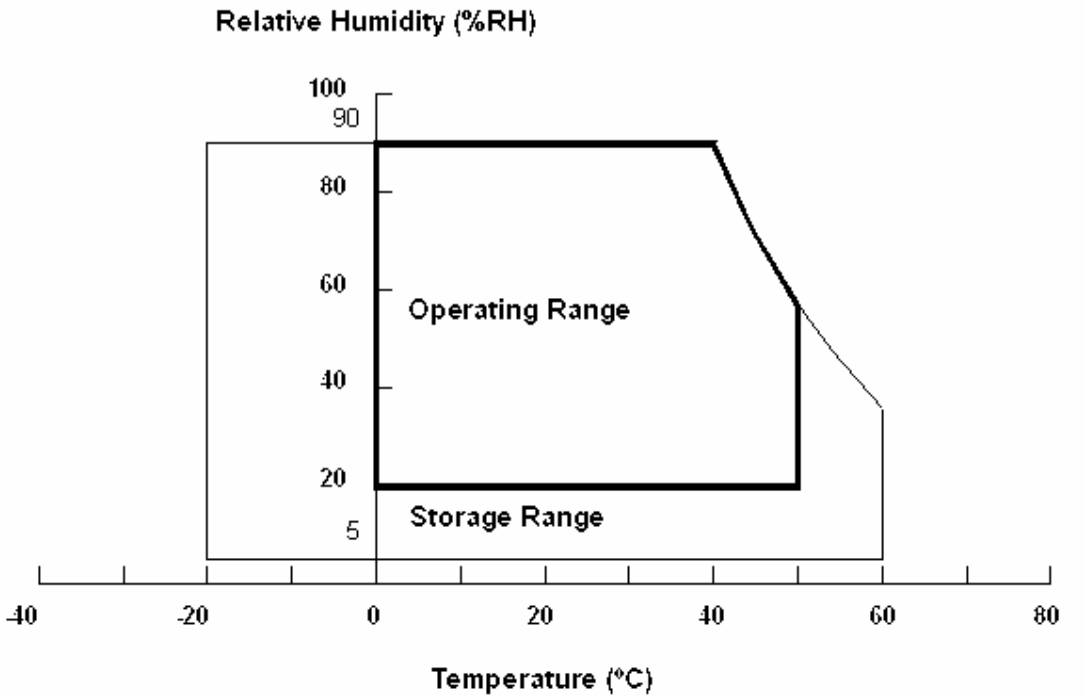
Panel Relative Humidity



JP777-E02

Input Signals

Video input

- Type — Analog R, G, B. — DVI (option)
- Input Impedance — 75 ohm +/- 2%
- Polarity — Positive
- Amplitude — 0 - 0.7 +/- 0.05 Vp
- Display Color — same as LCD panel

Sync input

- Signal — separate horizontal and vertical sync, or composite sync which are TTL compatible
- Polarity — positive and negative.

Interface frequency

The following frequency range is generalized by supported timing. If the entered mode does not match the supported timing the display optimization will not be assured.

- Horizontal Frequency 30KHz --80KHz
- Vertical Frequency 49Hz -------75Hz

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Supported Timing

TIMING	FH(KHZ) FV(HZ)	SYNC POLARITY	TOTAL (DOT/LINE)	ACTIVE (DOT/LINE)	SYNC WIDTH (DOT/LINE)	FRONT PORCH (DOT/LINE)	BACK PORCH (DOT/LINE)	PIXEL FOREQ.(MHZ)
640x350	31.469	+	800	640	96	16	48	25.175
VGA-350	70.087	–	449	350	2	37	60	
640x400	24.83	–	848	640	64	64	80	21.05
NEC PC9801	56.42	–	440	400	8	7	25	
640x400	31.469	–	800	640	96	16	48	25.175
VGA-GRAPH	70.087	+	449	400	2	12	35	
640x400	31.5	–	800	640	64	16	80	25.197
NEC PC9821	70.15	–	449	400	2	13	34	
640X480	31.469	-	800	640	96	16	48	25.175
VESA-PAL	50.030	-	629	480	2	62	85	
640x480	31.469	–	800	640	96	16	48	25.175
VGA-480	59.94	–	525	480	2	10	33	
640x480	35.00	–	864	640	64	64	96	30.24
APPLE MAC-480	66.67	–	525	480	3	3	39	
640x480	37.861	–	832	640	40	16	120	31.5
VESA-480-72Hz	72.809	–	520	480	3	1	20	
640x480	37.5	–	840	640	64	16	120	31.5
VESA-480-75Hz	75	–	500	480	3	1	16	
720x400	31.469	–	900	720	108	18	54	28.322
VGA-400-TEXT	70.087	+	449	400	2	12	35	
832x624	49.725	–	1152	832	64	32	224	57.2832
APPLE MAC-800	74.55	–	667	624	3	1	39	
800x600	35.156	+	1024	800	72	24	128	36
SVGA	56.25	+	625	600	2	1	22	
800x600	37.879	+	1056	800	128	40	88	40
VESA-600-60Hz	60.317	+	628	600	4	1	23	
800x600	48.077	+	1040	800	120	56	64	50
VESA-600-72Hz	72.188	+	666	600	6	37	23	
800x600	46.875	+	1056	800	80	16	160	49.5
VESA-600-75Hz	75	+	625	600	3	1	21	
1024x768	48.363	–	1344	1024	136	24	160	65
XGA	60.004	–	806	768	6	3	29	
1024x768	53.964	+	1328	1024	176	16	112	71.664
COMPAQ-XGA	66.132	+	816	768	4	8	36	
1024x768	56.476	–	1328	1024	136	24	144	75
VESA-768-70Hz	70.069	–	806	768	6	3	29	
1024x768	60.023	+	1312	1024	96	16	176	78.75
VESA-768-75Hz	75.029	+	800	768	3	1	28	
1024x768	60.24	–	1328	1024	96	32	176	80
APPLE MAC-768	75.02	–	803	768	3	3	29	
1152x864	54.054	+	1480	1152	96	40	192	80
(60Hz)	59.270	+	912	864	3	13	32	
1152x864	63.851	+	1480	1152	96	32	200	94.499
(70Hz)	70.012	+	912	864	3	1	44	
1152x864	67.50	+	1600	1152	128	64	256	108.00
(75Hz)	75.00	+	900	864	2	2	32	
1280x960	60.00	+	1800	1280	112	96	312	108.00
(60Hz)	60.00	+	1000	960	3	1	36	
1280x960	70.00	+	1800	1280	112	96	312	126.00
(70Hz)	70.00	+	1000	960	3	1	36	
1280x960	75.00	+	1800	1280	112	96	312	135.00
(75Hz)	75.00	+	1000	960	3	1	36	
1280x1024	64	+	1688	1280	112	48	248	108
VESA-1024-60Hz	60	+	1066	1024	3	1	38	
1280x1024	80	+	1688	1280	144	16	248	135
VESA-1024-75Hz	75	+	1066	1024	3	1	38	

Note: Mode 640x350, 640x400 and 720x400 will locate on middle position but cannot be expanded to full screen on vertical direction

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Support Modes

There will be 28 total support modes to accommodate the above mode and other video modes within the frequency range of the monitor.

85Hz refresh rate Support

Monitor should display 85Hz refresh rate mode as emergency mode.

Monitor should display “Out of Range” warning menu at this mode.

Video input Connector

Analog Video input Connector: 15pins mini D-Sub

Table 2.4.5. Pin assignment for D-sub connector

PIN NO.	**Separate Sync**
1	RED VIDEO
2	GREEN VIDEO
3	BLUE VIDEO
4	GROUND
5	GROUND
6	RED GROUND
7	GREEN GROUND
8	BLUE GROUND
9	PC5V (+5V DDC)
10	CABLE DETECTION
11	GROUND
12	SDA
13	H.SYNC
14	V.SYNC
15	SCL

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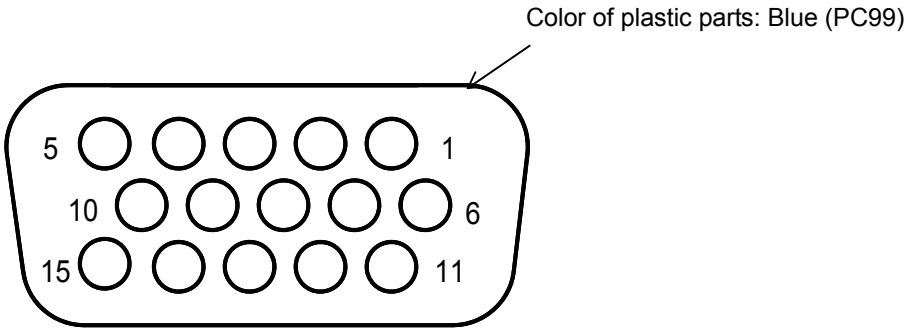


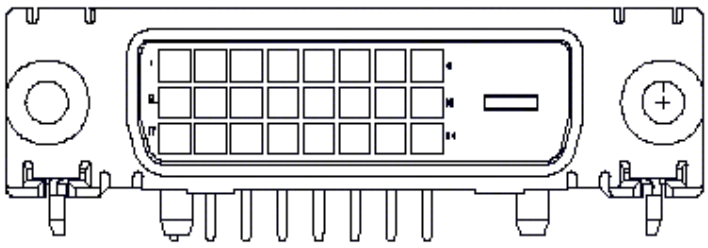
D-sub connector

Digital Video Input Connector : DVI – D (T.B.D)

Table 2.4.6 Pin assignment for DVI – D Connector:

Pin – Assignment of DVI –D connector :					
1	TX2-	9	TX1-	17	TX0-
2	TX2+	10	TX1+	18	TX0+
3	Shield (TX2 / TX4)	11	Shield (TX1 / TX3)	19	Shield (TX0 / TX5)
4	NC	12	NC	20	NC
5	NC	13	NC	21	NC
6	DDC-Serial Clock	14	+5V power *)	22	Shield (TXC)
7	DDC-Serial Data	15	Ground (+5V)	23	TXC+
8	No Connect	16	Hot plug detect	24	TXC-

*) In case, the power of the PC unit is switched off and the power of the monitor is switched on, no voltage may occur at pin 14.



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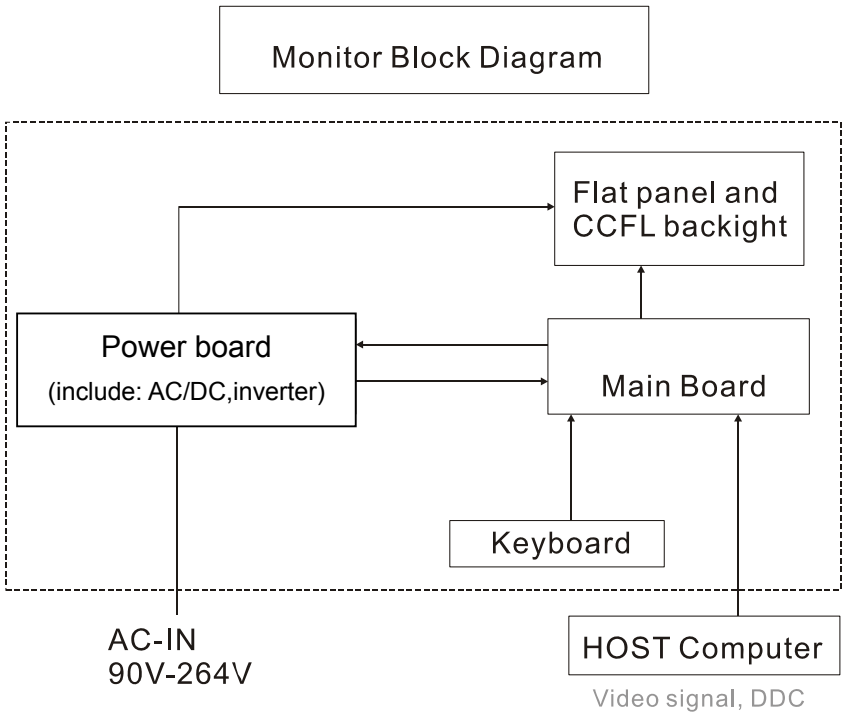
MONITOR BLOCK DIAGRAM

The LCD monitor will contain an main board, an inverter/ power board, key board and internal adapter which house the flat panel control logic, brightness control logic and DDC.

The inverter board will drive the backlight of panel and the DC-DC conversion.

The Adapter will provide thr 12V DC-power to inverter/ power board.



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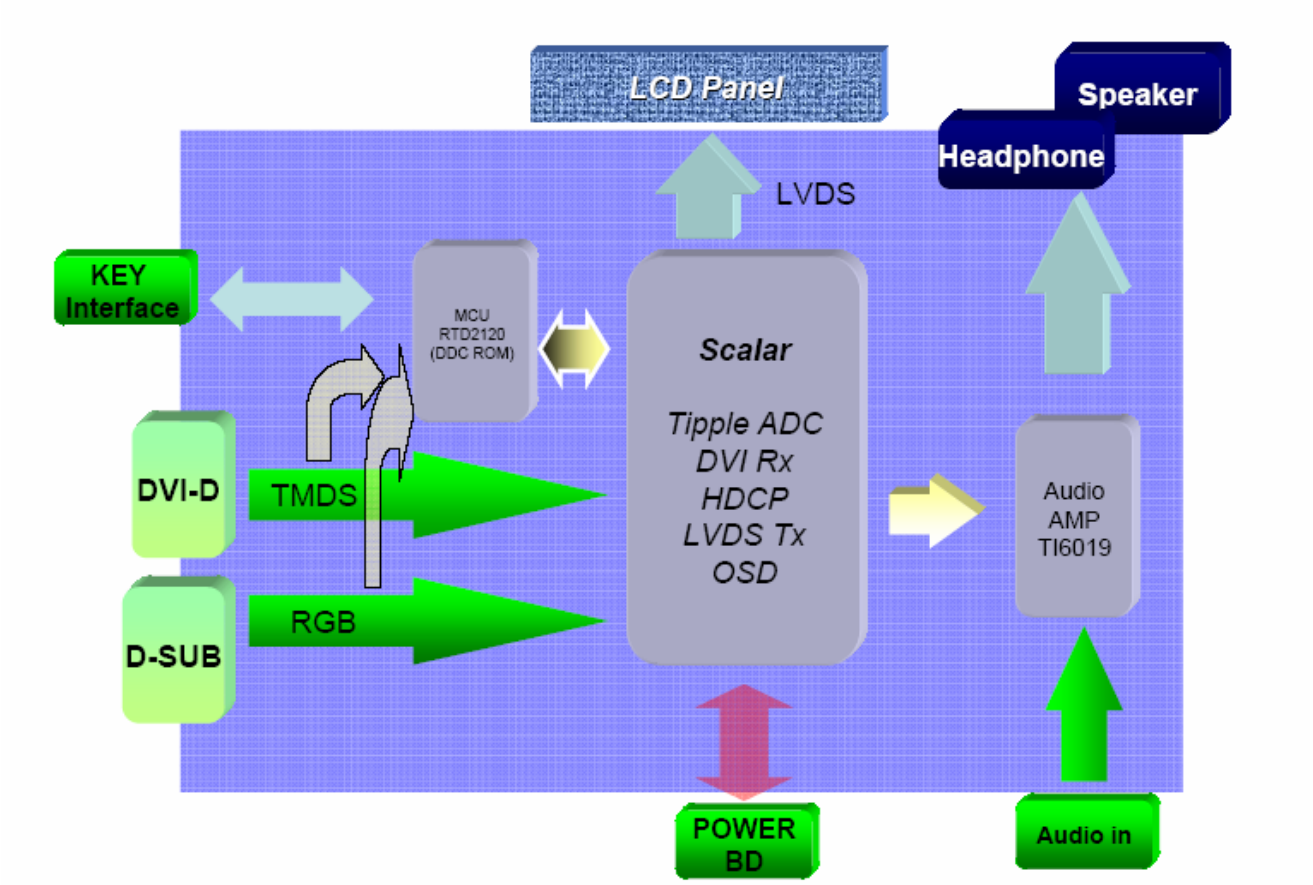
BLOCK DIAGRAM

System Block Diagram



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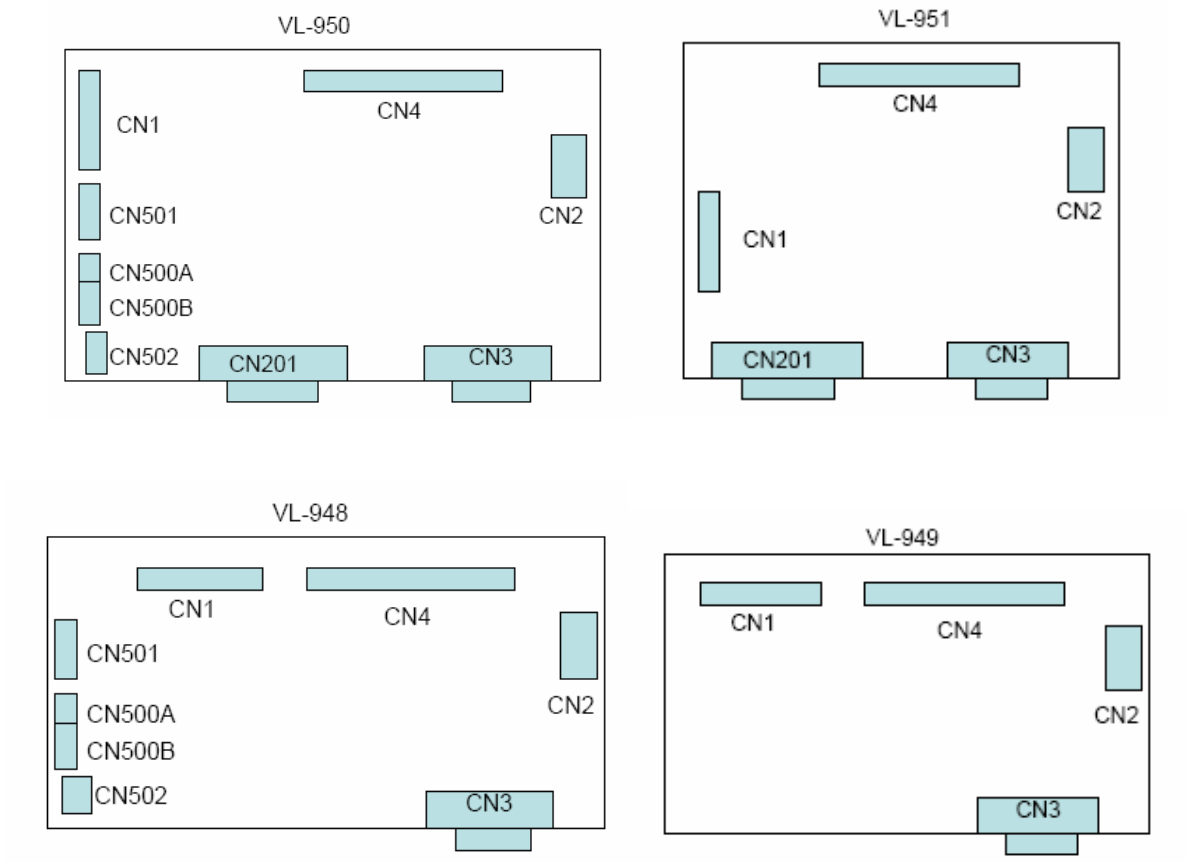
Monitor board layout.



LABEL	Component	LABEL	Component
U1	UZ1084L-33	CN1	E&T 4500-08/4500-06
U4	RTD2120	CN2	E&T 4501-19
U5	RTD2025/2045/2525/2545	CN3	D-SVB 15 PIN
U501	ATPA6019	CN4	P-TWO AFN300 30P
		CN201	E&T 4500-03
		CN500A	E&T 4500-02
		CN500B	E&T 4500-03
		CN501	NC
		CN502	E&T 4500-03

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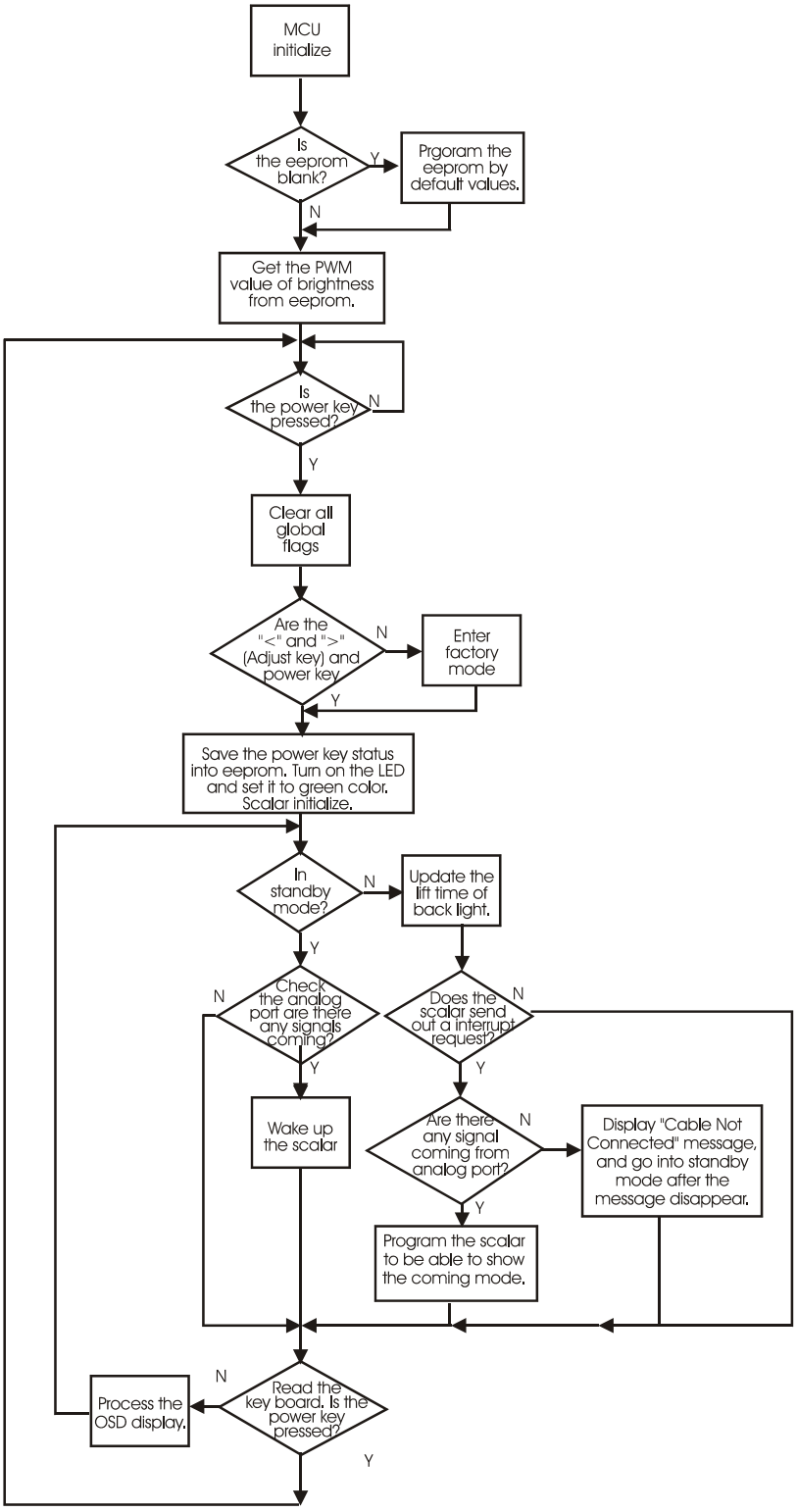
Software flow chart


MCU initialize
Is the eeprom blank?
Y
Prgoram the eeprom by default values.
N
Get the PWM value of brightness from eeprom.
Is the power key pressed?
N
Y
Clear all global flags
Are the "<" and ">" (Adjust key) and power key
N
Enter factory mode
Y
Save the power key status into eeprom. Turn on the LED and set it to green color. Scalar initialize.
In standby mode?
N
Update the lift time of back light.
Y
Check the analog port are there any signals coming?
N
Does the scalar send out a interrupt request?
N
Y
Y
Wake up the scalar
Are there any signal coming from analog port?
N
Display "Cable Not Connected" message, and go into standby mode after the message disappear.
Y
Program the scalar to be able to show the coming mode.
Read the key board. Is the power key pressed?
N
Process the OSD display.
Y

.

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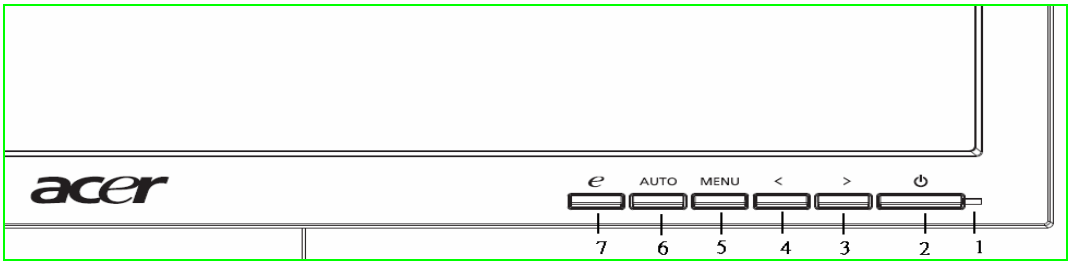
General Instructions

Press the power button to turn the monitor on or off. The other control buttons are located at front panel of the monitor. By changing these settings, the picture can be adjusted to your personal preferences.

- The power cord should be connected.
- Connect the video cable from the monitor to the video card.
- Press the power button to turn on the monitor position. The power indicator will light up.



External Controls

1	**LED**	5	MENU/ENTER
2	⏻ / Power Key	6	**Auto Adjust Key/Exit**
3	>/ Volume	7	eCOLOR
4	</ Volume		

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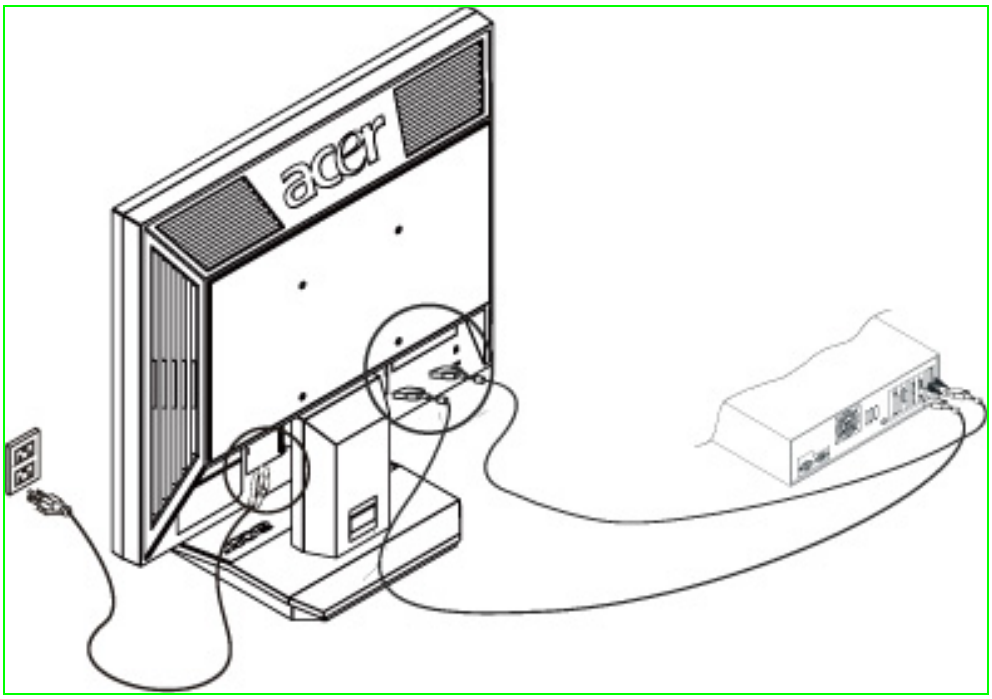
System Installation



Connecting the Display

- Power off your computer.
- Connect one end of the signal cable to the LCD Monitor's VGA port.
- Connect the other end of the signal cable to the VGA port on your PC.
- Make sure connections are secure.

Connecting the AC Power

- Connect the power cord to the LCD Monitor.
- Connect the power cord to an AC power source.

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POWER/Inverter Board

Description

This specification defined the performance and characteristic of power/inverter board.

It supplies the following outputs :

1). 5Vdc: Logic power.

2). 5Vaudio: Audio power.

3). 19Vinv: Inverter power.

Features

Input Voltage: 100 ~ 240 ±10%Vac

Input Frequency: 47 ~ 63Hz

Input power consumption: Less than 1W @ minimum load

Total output power: 40Wmax

Inverter brightness adjustment: Burst mode

Protection function: auto-recovery type

Interface Signals

Input

1. AC Inlet: HUAJIE SA-4S-328 or compatible.

2. J701: SC SCJ-0345-1-X-9 3.6D BLU 3P or compatible.

Output Connector & Pin Assignment:

1. The connecter was pitch 2.0mm.

PIN NO.	Function	Function
1	+5Vdc	+5Vdc supply for logical board
2	+5Vdc	+5Vdc supply for logical board
3	Vbri	Brightness control from logical board (0V to 3.3V)
4	Ven	Inverter enable signal from logical board (high active , >3V)
5	GND	Ground
6	GND	Ground
7	GND	Audio ground
8	+5Vaudio	Audio power (optional).

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2.Inverter-side connecter : ACES 88451-020N-01 2P3.5 LOCK or equivalent.

PIN NO.	Function	Comment
1	Cth	VBLH(High voltage)
2	Ctl	VBLL(Low voltage)

Electrical Specification:

AC-DC Electrical specification

3.4.1.1 Input Specification

No	Item	Condition	Min.	Typ.	Max.	Unit
1	Input Voltage	-----	100	---	240	Vac
2	Input requency	-----	47	---	63	Hz
3	Input Current	-----	---	---	0.8	Arms
4	Inrush Current	Cold Start @Vin=100Vrms	---	---	30	A0-P
		Cold Start @Vin=240Vrms		---	50	A0-P
5	Hold Up Time	@full load & 100Vac input	10	---	---	ms
6	Turn on time	Vin =110Vac	---	1.0	---	S
7	Efficiency	Full load	---	70	---	%
8	Consumption	Vin=240Vac,@ no load	---	---	1	W

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3.4.1.2 AC-DC Output Specification

	Tolerance	Output Current		Voltage Tolerance
Output oltage	---	MIN	MAX	
+5Vdc	+5 /-3 %	0.05A	1.5A	4.85~5.25V dc
+19Vinv	+35/-5 %	0A	2A	24~18Vdc
+5Vaudio	±5%	0A	0.6A	4.75~5.25Vdc
Ripple	Measured at DC output terminals which are paralleled with a 10uf Ecap &0.1uf Ceramic cap. 2.Band width is limited within 20MHz	---	1%	+5Vdc:50mVp-p +19Vinv:190mVp-p
Noise		---	3%	+5Vdc:150mVp-p +19Vinv:570mVp-p
Dynamic Load Regulation	50~100% or 100~50% load change of any DC output @50% duty of	---	±5%	---
Over / Under	@ Power line on/off	---	±10%	---

*+5Vdc load regulation test: the +19Vinv loading at 2.0A

*+19Vinv load regulation test: the +5Vdc loading at 1.5A

3.4.1.3 Protection function

1) SCP: Short circuit protection must be acted on both outputs

2) OPP: Should be protected when output power consumption is within ~ 55W

Inverter Electrical Specification:

For 19" Panel

	Condition	Min.	Typ.	Max.	Unit
Input Voltage	---	---	19	---	V
Input Current	---	---	1.5	---	A
Backlight ON/OFF Control	ON		3.3		V
	OFF		0		V
Brightness Adjust	Min. Luminance / Max. Luminance	---	30%	---	---
Output Voltage	Vin=19V, Iout=7mA	---	650	---	Vrms
Brightness	lamp current in 7mA	250	300	---	Cd/m²
Output Current(Each connector)	Vbri=0.4V~3.3V	4	7.5	8	mA
Frequency	---	40	---	60	KHz
Lamp start voltage	@0℃	1650	---	---	Vrms

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Striking Time	---	---	1	---	S
Lamp Current Balance	---	---	±0.35	---	mA
Efficiency	Vin=19V	---	80	---	%

*.The open lamp voltage is testes at output connector terminal

SAFETY

Leakage Current: 0.25mA @ 100Vac

3.5mA @ 264Vac

Insulation Resistance: more than 3M ohms while withstanding a voltage of 500Vac

Hi-Pot: 3Kvac with using 3mA cut off current

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Power Consumption

The monitor is equipped with a power-management according to the below.

There is a delay of 5s … 7s before the transition from On-state to any power saving state to avoid unintentionally entering of a power saving stage during display resolution and timing mode changes.

Transition from any power saving state to another can be instantaneous.

The recovery from Off-state requires no manual power on.

Mode	H-Sync.	V-Sync.	Video	Pw-cons.	Indicator	Rec. time*
Power-On	on	on	active	< 40W	Blue LED	--
DPMS off	off	off	blanked	< 2 W	Orange LED	< 5S
DC Switch-off				< 1 W	Dark LED	

SYNC. On means: Normal operation

SYNC. Off means: H sync. F < 10KHz duty cycle > 25%

V sync. F < 10Hz duty cycle > 25%

CONNECTORS / CONTROLS

Connectors

- Power : Monitor rear side : AC Inlet
- Analog RGB : Monitor rear side / Data Cable : 15-pin D-sub female / male

Pin – Assignment of 15-pin D-sub:

1	Red Video	9	+5V FOR DDC
2	Green Video	10	Detect
3	Blue Video	11	Serial Data for ISP
4	Serial Clock for ISP	12	Serial Data for DDC
5	Ground	13	H-Sync.
6	Red Ground	14	V-Sync.
7	Green Ground	15	Serial Clock for DDC
8	Blue Ground		

- Audio : Monitor rear side :
  -PC I/P for PC : 3.5mm Stereo female

Monitor Control Keys

KEY : Power , Menu , Adjust +/- , Vol +/-, Auto

Position Of Controls

Position of all switches : Bottom side of front bezel

Position of LED : Bottom side of front bezel

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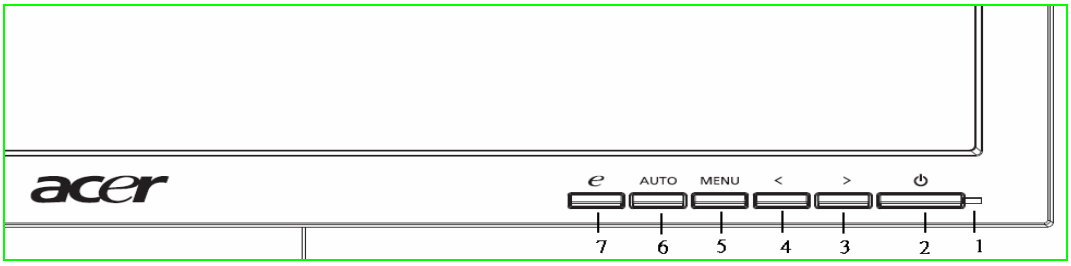
Chapter 2

Operating Instructions

CONTROLS



Control panel (monitor front panel)

1		*Power LED, will be blue when monitor is on; be amber when in power saving mode.*
2	⏻	*Power ON/OFF switch, push to ON and push to OFF. (toggle switch)*
3	>	*Function change or Adjust increase.*
4	<	*Function change or Adjust decrease.*
5	***Menu***	*Function select*
6	***Auto***	*Auto adjust or Exit OSD menu.*
7	***e***	*eColor management function*

How to Adjust a Setting

1. Press the MENU-button to activate the OSD window.
2. Press < or > to select the desired function.
3. Press the MENU-button to select the function that you want to adjust.
4. Press < or > to change the settings of the current function.
5. To exit and save, select the exit function. If you want to adjust any other function, repeat steps 2-4.

Note:

1. Press button 3 (plus +) or 4 (minus -) at the same time can activate “Volume Adjustment”.

2. When OSD Menu is off, press button 6 (auto) at the same time can activate “Auto Adjustment” immediately.

3. When into Factory mode press 3 (plus +) ,4 (minus -) and 2 (power) together 2 seconds at same time.

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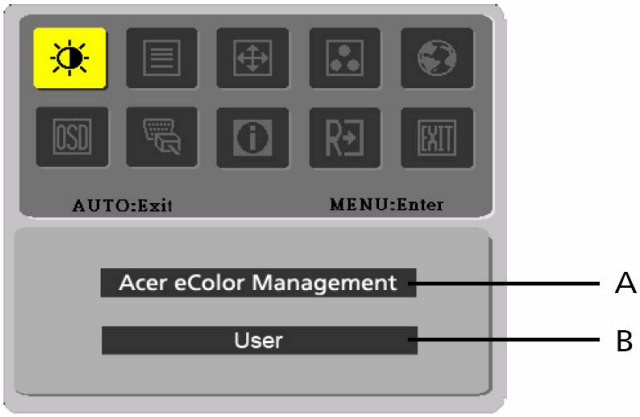
Main OSD Menu:

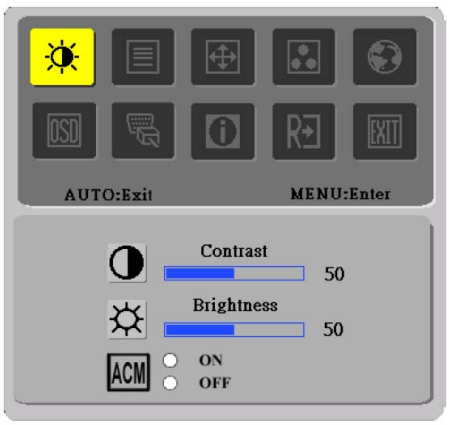
Outline:

- P/X Series OSD behave
  When user press “MENU” button on front bezel

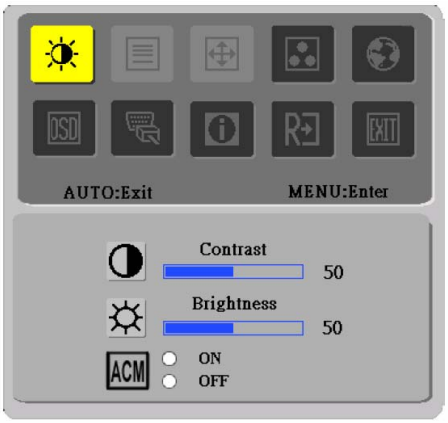


A. Acer eColor Management
   If selected to “Acer eColor Management” item, will appear the Acer eColor” OSD

B. USER
   If selected to “USER” item, will appear the Standard OSD



I. Only Analog Input Model



II. Only Dual Input Model

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The description for control function :

A. Acer eColor Management

Main Menu icon	Sub Menu icon	Sub Menu item	Description
	N/A	User mode	User defined. Settings can be fine-tuned to suit any situation
	N/A	Text mode	Optimal balance of brightness and contrast prevent eyestrain. The most comfortable way to read onscreen text
	N/A	Standard mode	Default Setting. Reflects native display capability
	N/A	Graphic mode	Enhances colors and emphasize fine detail
	N/A	Movie mode	Displays scenes in clearest detail. Pictures and photographs appear in vibrant colors with sharp detail

B. USER.

Main Menu icon	Sub Menu icon	Sub Menu item	Description
		Contrast	Adjust the contrast between the foreground and background of the screen image
		Brightness	Adjust the background brightness of the screen image
		ACM	ACM (Adaptive Contrast Management)A CM ON/OFF Switch, default "OFF"
		Focus	Adjust picture Focus (available in analog mode only)
		Clock	Adjust picture Clock (available in analog mode only)

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Main Menu icon	Sub Menu icon	Sub Menu item	Description
		H. Position	Adjust the horizontal position. (available in Analog mode only)
		V. Position	Adjust the vertical position. (available in Analog mode only)
	N/A	Warm	Set the color temperature to warm white.
	N/A	Cool	Set the color temperature to cool white.
		User /Red	Adjusts Red/Green/Blue intensity
		User /Green	
		User /Blue	
	N/A	English	Multi-language selection.
	N/A	繁體中文	
	N/A	Deutsch	
	N/A	Français	
	N/A	Español	
	N/A	Italiano	
	N/A	简体中文	
	N/A	日本語	
	N/A	Suomi	EMEA version OSD only
	N/A	Hollands	
	N/A	Русский	
		H. Position	Adjust the horizontal position of the OSD.
		V. Position	Adjust the vertical position of the OSD.
		OSD Timeout	Adjust the OSD timeout.
	N/A	Analog	Select input signal from analog (D-Sub)
	N/A	Digital (only Dual Input Model)	Select input signal from digital(DVI) (only Dual-Input Model)
	N/A	DDC/CI	Turn ON/OFF DDC/CI support

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	N/A	Information	Show the resolution, H/V frequency and input port of current input timing.
	N/A	Reset	Clear each old status of Auto-configuration and set the color temperature to Cool.
	N/A	Exit	Save user adjustment and OSD disappear.

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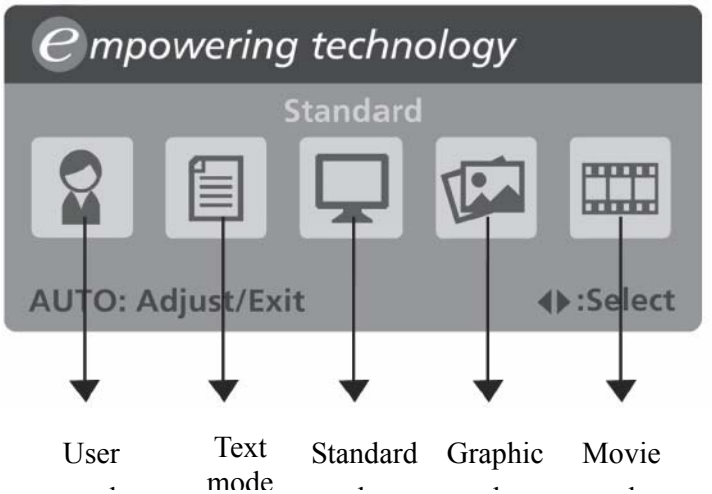
Hot-Key Menu: eColor Management:

Outline:



Operation instructions

Acer eColor Management

Step 1: Press " Key" to open the Acer eColor Management OSD and access the scenario modes
Step 2: Press "<" or ">" to select the mode
Step 3: Press "Auto Key" to confirm the mode and run Auto Adjust

Features and Benefits

Mode	Features	Benefits
Standard	Default settings	Reflects native display capability
Text	Optimal balance of brightness and contrast prevents eyestrain	The most comfortable way to read onscreen text
Graphics	Enhances colors and emphasizes fine detail	Pictures and photographs appear in vibrant colors with sharp detail
Movie	Displays scenes in clearest detail	Presents great visuals, even in unsuitably-lit environments
User	User defined	Settings can be fine-tuned to suit any situation

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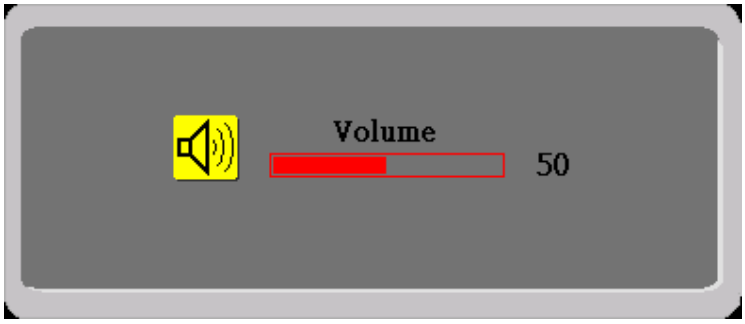
Audio Volume control:(option)

Outline:



The description for Hot-Key function :

Item	Operation	Icon	Description	Adjustment Range	Reset Value
Volume	When the OSD is closed, press Left or Right button will be Volume Hot-Key Function		Volume of Audio adjustment. The Audio will be Mute when volume=0.	0-100	50

OSD Message:

Outline:

The description for OSD Message :

Item	Description
Auto Config Please Wait	When User Press Hot-Key “Auto”, will show this message, and the monitor do the auto config function.
Input Not Supported	When the Hsync Frequency, Vsync Frequency or Resolution is out of the monitor support range, will show this message. This message will be flying.
Cable Not Connected	When the video cable is not connected, will show this message. This message will be flying.
No Signal	When the video cable is connected, but the is no active signal input, will show this message, then enter power saving.

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LOGO:

When the monitor is power on, the LOGO will be showed in the center.

Item of Factory menu

Vendor may customize design and add adjustment items Factory menu as far as all required items are included.

1) Bright

Adjust Brightness and Contrast value to Max.

2) Auto Balance

Adjust each R, G, B contrast (gain) and offset.

Method of auto adjust is depends on hardware.

Adjusted value of R, G, B gain shall be used for initial value of Contrast in user menu.

All value shall be adjustable manually.

This function shall be located in 3. tag of Factory menu.

3) Factory color temp data edit

Following data for color temp shall be editable manually.

-color temp default preset No.

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Plug and play

Plug & play DDC2B feature

This monitor is equipped with VESA DDC2B capabilities according to the VESA DDC STANDARD. It allows the monitor to inform the host system of its identity and, depending on the level of DDC used, communicate additional information about its display capabilities. The communication channel is defined in two levels, DDC2B.

The DDC2Bis a bidirectional data channel based on the I^2C protocol. The host can request EDID information over the DDC2B channel.

THIS MONITOR WILL APPEAR TO BE NON-FUNCTIONAL IF THERE IS NO VIDEO INPUT SIGNAL. IN ORDER FOR THIS MONITOR TO OPERATE PROPERLY, THERE MUST BE A VIDEO INPUT SIGNAL.

This monitor meets the Green monitor standards as set by the Video Electronics Standards Association(VESA) and/or the United States Environmental Protection Agency (EPA) and The Swedish Confederation Employees (NUTEK). This feature is designed to conserve electrical energy by reducing power consumption when there is no video-input signal present. When there is no video input signal this monitor, following a time-out period, will automatically switch to an OFF mode. This reduces the monitor's internal power supply consumption. After the video input signal is restored, full power is restored and the display is automatically redrawn. The appearance is similar to a "Screen Saver" feature except the display is completely off. The display is restored by pressing a key on the keyboard, or clicking the mouse.

Using The Right Power Cord

The accessory power cord for the Northern American region is the wallet plug with NEMA 5-15 style and is UL listed and CSA labeled. The voltage rating for the power cord shall be 125 volt AC.

Supplied with units intended for connection to power outlet of personal computer: Please use a cord set consisting of a minimum No. 18 AWG, type SJT or SVT three conductors flexible cord. One end terminates with a grounding type attachment plug, rated 10A, 250V,CEE-22 male configuration. The other end terminates with a molded-on type connector body, rated 10A, 250V, having standard CEE-22 female configuration.

Please note that power supply card needs to use VDE 0602, 0625, 0821 approval power cord in European counties.

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White Color Temperature

White color temperature is 4 preset as 9300, 7500,6500 and User,

Default value of user color should be user which is maximum setting for panel.

Target of color setting

Color Temp.	Color Coordinate		Tolerance	Color Coordinate		Tolerance
	x	y		u'	v'	
9300K	0.283	0.297	±0.03	0.189	0.446	u'v' ≤ 0.01*
6500K	0.313	0.329	±0.03	0.198	0.469	u'v' ≤ 0.01*
User	-	-		-	-	-

*) TCO'0X A.2.6.1 requirement

User should follow "Microsoft Windows Color Quality Specification for Liquid Crystal Display OEM's".

(http://www.microsoft.com/hwdev/tech/color/ColorTest.asp)

Audio Technical specification

General Description:

Output power	: 1W + 1W maximum
Total harmonic distortion	: Less than 1 % (except speakers distortion)
Input signal sensitivity	: 0.5 Vrms for full output
Input impedance	: 47 Kohm +/- 5 %
Frequency response range	: 20Hz – 20kHz (except speakers response)

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Electrical characteristics (Tamb=25°)

Audio amplifier(USE Panasonic VP-7723A Audio Analyzor.)

Item	Audio Input	Freq.	Spec.			Comment
			Min.	Typ.	Max.	
Input Voltage(V)			-	0.5Vms	-	
Input Current(m A)			-	500	800	
Audio Voltage Gain	500m Vrms	1KHz	-	-	6 d B	Volume Max.,load 4 Ω
Frequency Response	500m Vrms	300Hz-20KHz	-10dB	-	+10d B	Volume Max.,load 4 Ω
Signal to Noise ratio	500m Vrms	1KHz	-	-	-40dB	Volume Max.,load 4 Ω
Total harmonic distortion	500m Vrms	1KHz			1%	except speakers distortion
Cross talk	500m Vrms	1KHz	-	-	-30dB	Volume Max.,load 4 Ω
Output Watt.	500m Vrms	1KHz	-	-	0.5W	Volume Max.,load 4 Ω
Volume Control			-	-	-	Analog

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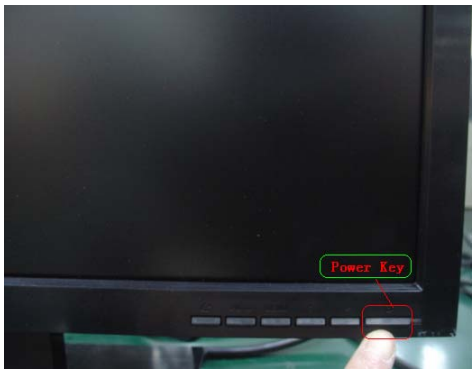
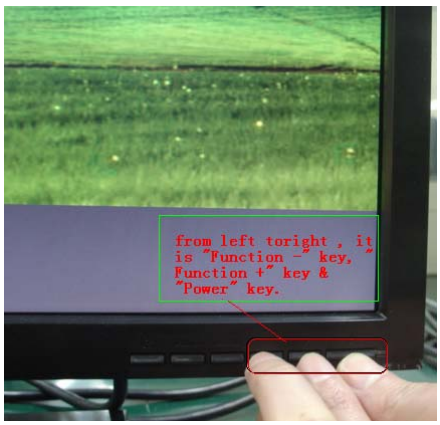
SOP for Factory Mode

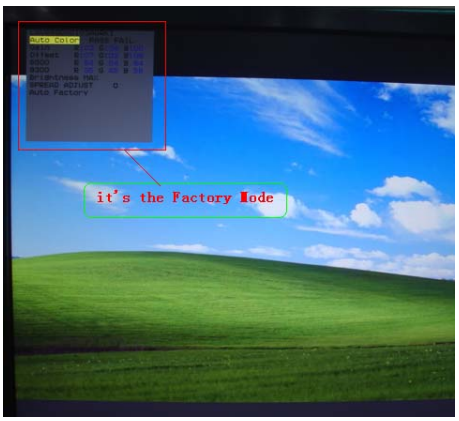
1. Connect D-SUB cable and Power cord according to the graphic, and input power and signal

2. Turn on the monitor by clicking the power key, and show the normal image



4. Press the “Function -”key, “Function +” key & “Power” key simultaneously and Factory Model is got into as below





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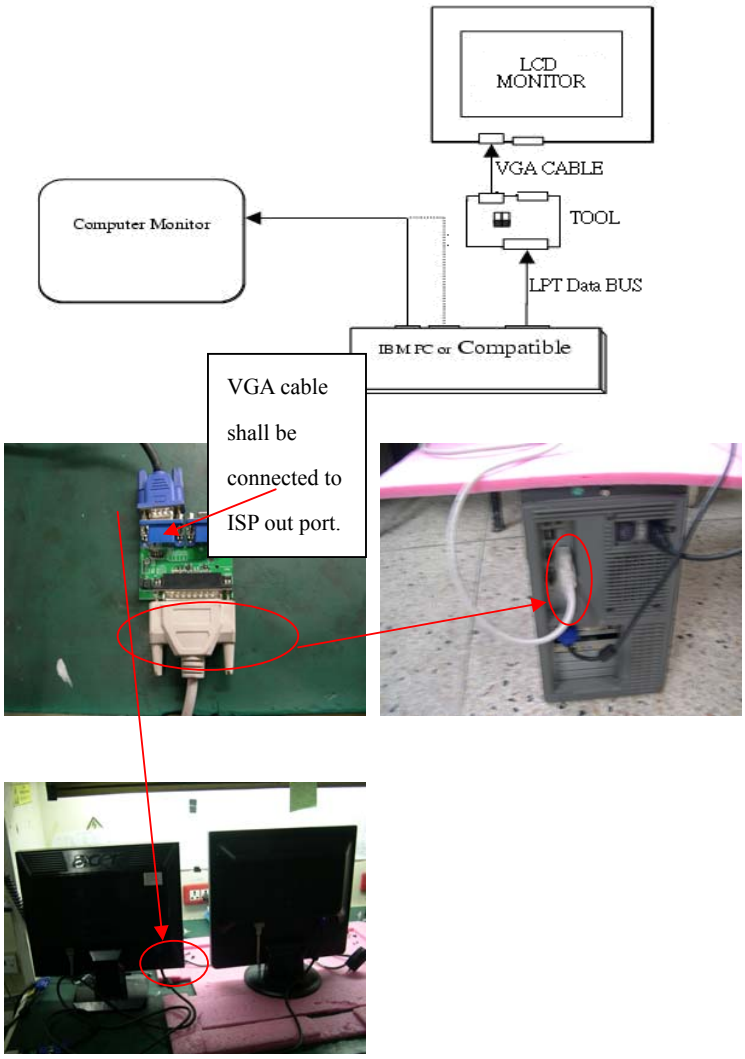
SOP for ISP (Firmware upgrade)

1. Operation system & Connection

a. PC (Win XP), b. ISP tool, c. VGA cable, d. RS232 cable

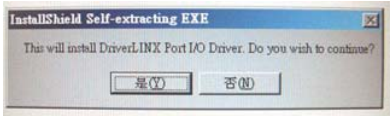
b. Turn on the power of monitor.



2. Install ISP BD driver on PC system

a. Click the ISP driver program(port95nt.exe)

b. Click 是(Y) to next page



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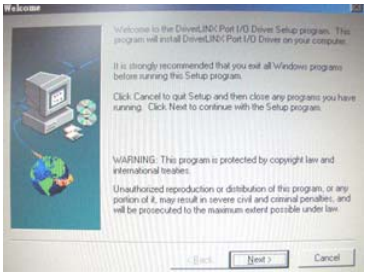
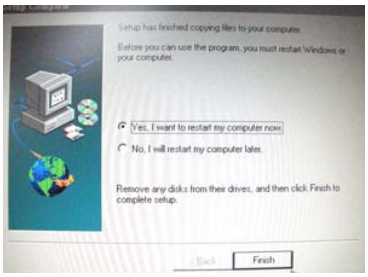
c. Click Next > or Yes to next page


Welcome
Welcome to the DriverLINX Port I/O Driver Setup program. This program will install DriverLINX Port I/O Drivers on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
< Back
Next >
Cancel

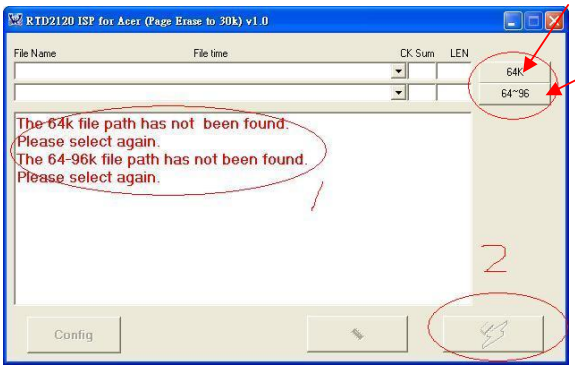
d.Click Finish to complete this setup.


Setup has finished copying files to your computer.
Before you can use the program, you must restart Windows or your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
Back
Finish

3. Open the ISP program on PC system

Click the ISP program (RTD2120_ISP_vXX.exe)

4. Load F/W files (There are two F/W files, XXX_code.hex&xxx_data.hex)



a. Hold on the K/B“**Ctrl**”Key，

b. Click 64K to load F/W file(Ex：C：\Code\Acer \Acer_code.hex;

c. Click 64~96 to load F/W file (Ex:C：\Code\Acert\Acer_data.hex;

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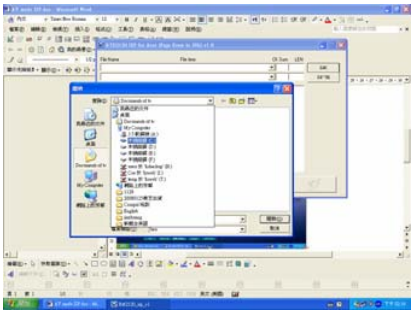
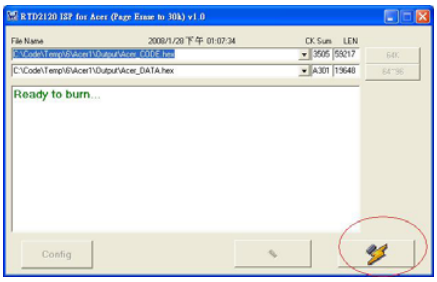
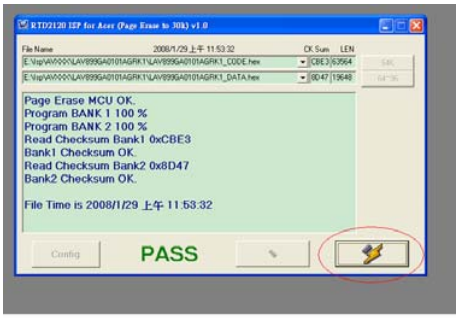


d. Click to update F/W.



e. The ISP process would be finished after the menu occur the “PASS” message.

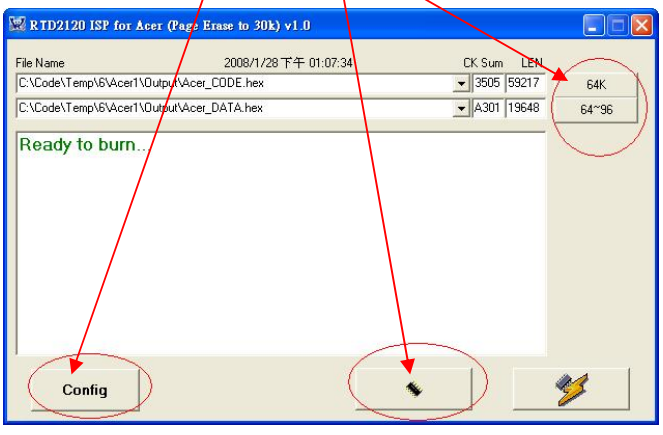

RTD2120 ISP for Acer (Page Erase to 30k) v1.0
Page Erase MCU OK.
Program BANK 1 100 %
Program BANK 2 100 %
Read Checksum Bank1 0xCBE3
Bank1 Checksum OK.
Read Checksum Bank2 0x8D47
Bank2 Checksum OK.
File Time is 2008/1/29 上午 11:53:32
Config
PASS

5. We shall hold on the K/B "**Ctrl**" key before we want to use below functions.

(1). Load F/W files。

(2). Config Function

(3). Verify CheckSum function



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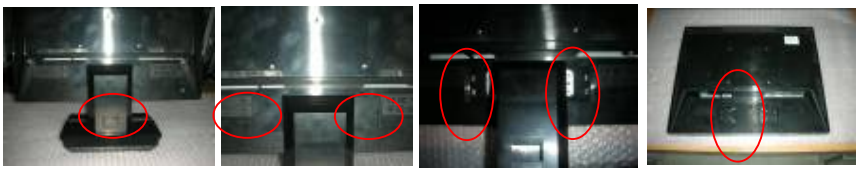
Chapter 3

Machine Disassembly and Replacement

Disassembly Procedure

Disassemble the stand neck and base

1. **Push release button and remove the base.**
2. **Remove the hinge cover.**
3. **Remove the four screws to release the hinge.**
4. **Remove the stand neck**



Disassemble the chassis

1. **To separate the back cover.**
2. **Remove the two screws from hinge bracket.**
3. **Disassemble the FFC form VL board**
4. **Remove the two screws from VGA connector (four screws from VGA and DVI connector).**
5. **Remove the two screws form chassis.**
6. **Disassemble the FFC form panel connector.**
7. **Disassemble four voltage lines from power board.**
8. **Remove speaker four screws form panel bracket** R/L
9. **Remove the chassis support**

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Disassemble the main board and the power board

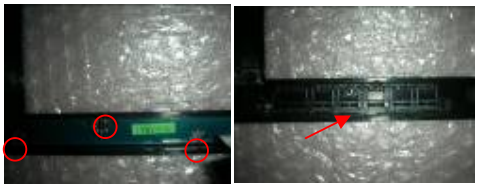
1. **Remove the five screws to release line from Chassis**
2. **Disassemble audio line from VL board and power board (option).**
3. **Disassemble power line from VL board and power board.**
4. **Disassemble speaker line from VL board.**
5. **Disassemble the FFC form VL board**

Disassemble the mylar

1. **Remove the two mylars to release line from Chassis**
2. **Remove the one mylar to release line from Chassis**

Disassemble the key board

1. **Remove three screw to release VK board from bezel.**
2. **Disassemble the button from bezel.**



Disassemble the panel bracket

1. **Remove tow screws to release panel bracket R from penal.**
2. **Remove tow screws to release panel bracket L from penal .**

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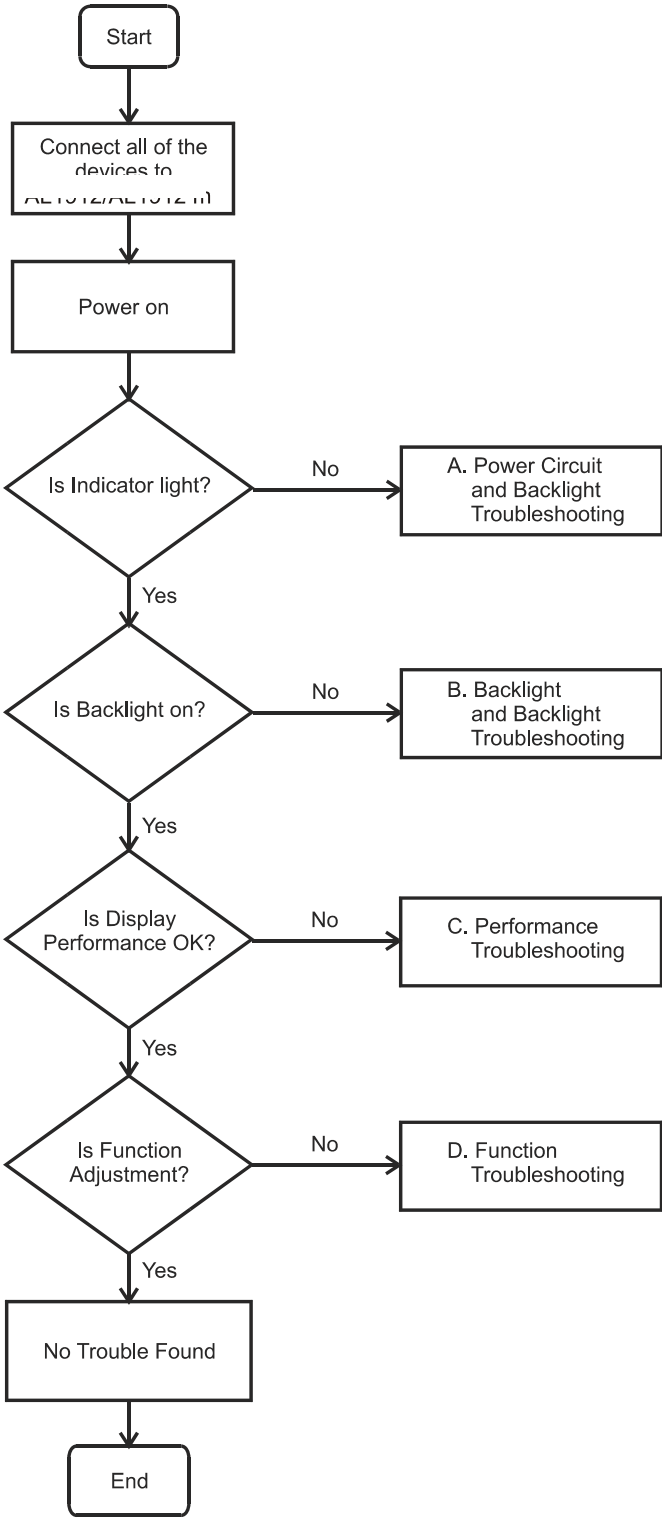
Chapter 4

Troubleshooting

Main Procedure



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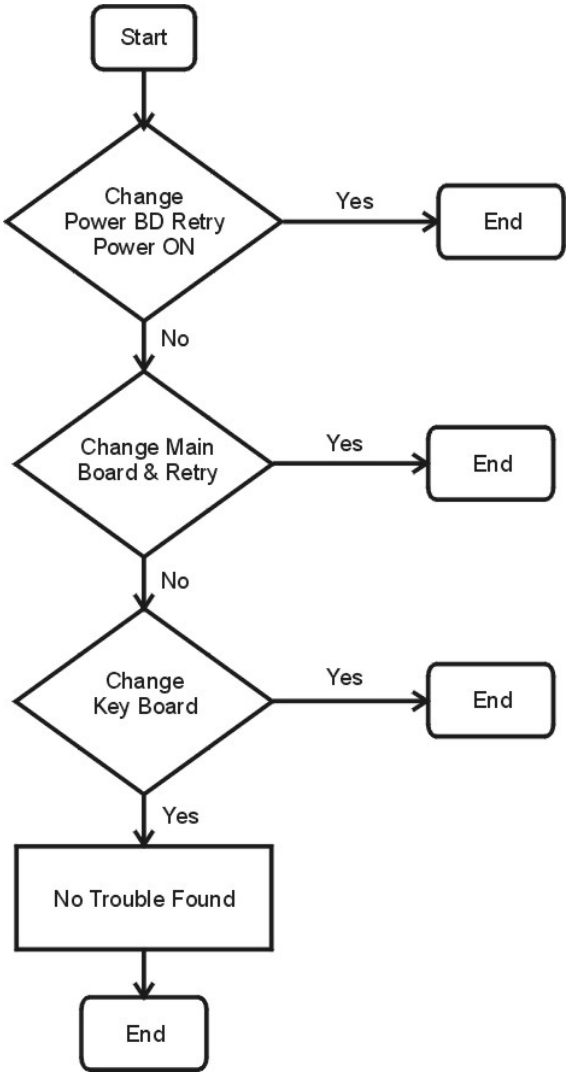
Power Circuit and Backlights Troubleshooting



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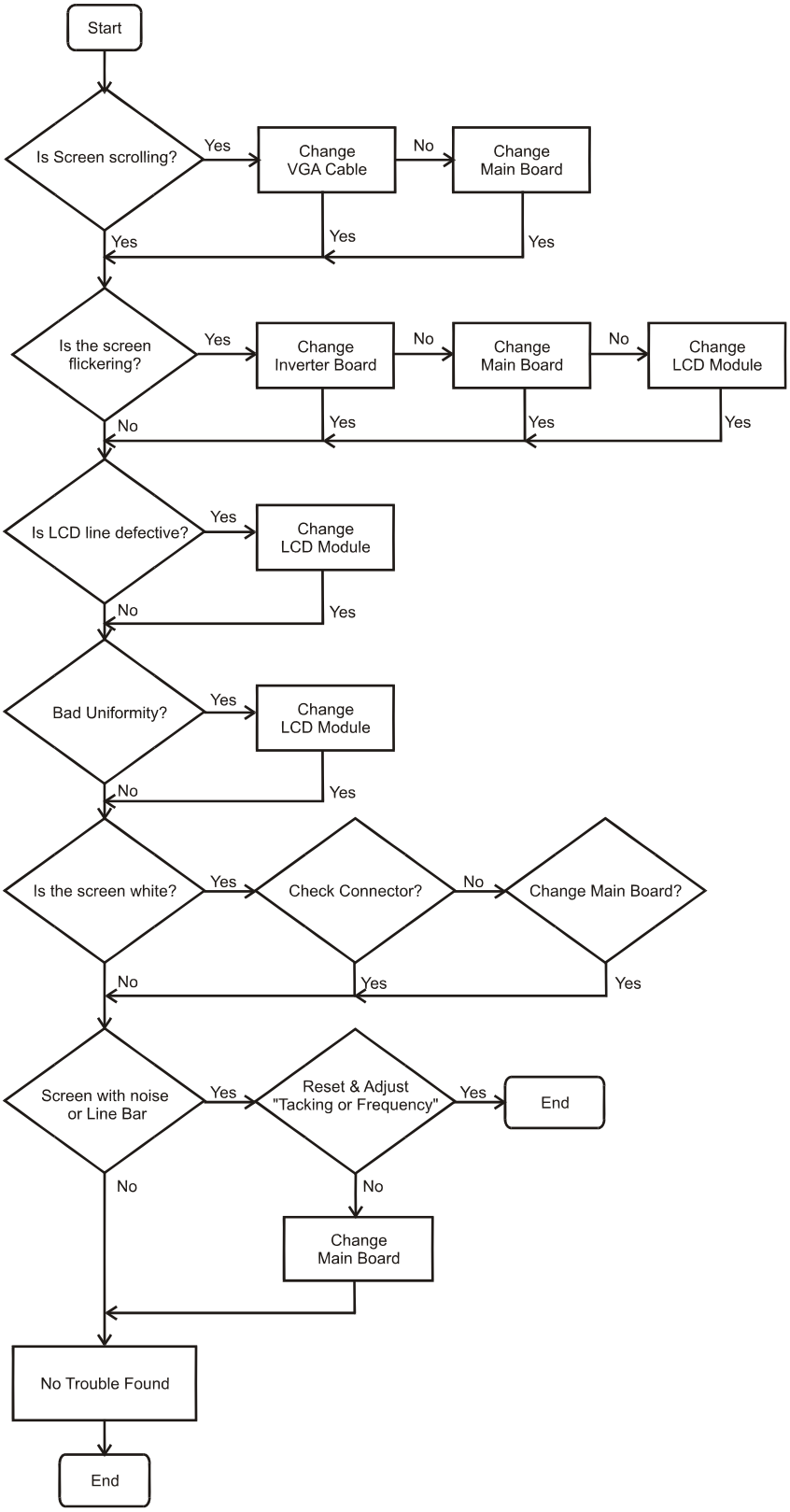
Performance Troubleshooting



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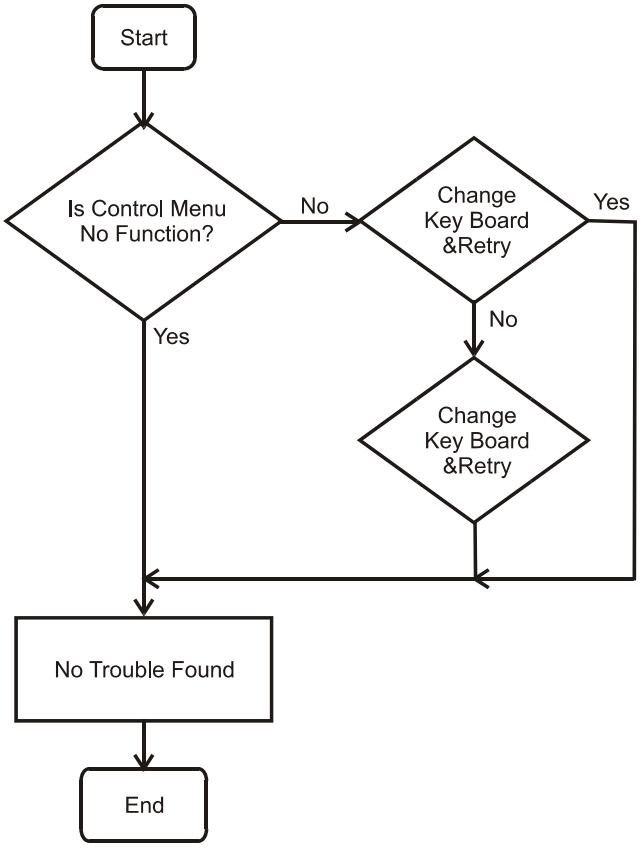
Function Troubleshooting



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Chapter 5

Connector Information

Phonejack stereo

PIN1. right : CEE22 typed connector

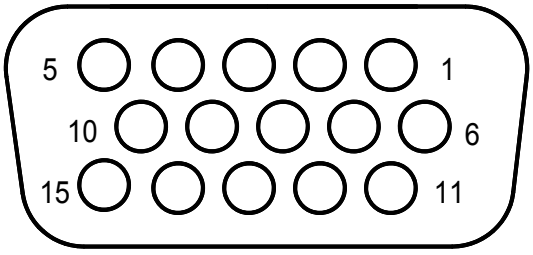
PIN2. Left

PIN3. Gnd : Line-in receptacle

Video input Connector

Analog Video input Connector: 15pins mini D-Sub

Table 2.4.5. Pin assignment for D-sub connector



PIN NO.	Separate Sync
1	RED VIDEO
2	GREEN VIDEO
3	BLUE VIDEO
4	GROUND
5	GROUND
6	RED GROUND
7	GREEN GROUND
8	BLUE GROUND
9	PC5V (+5V DDC)
10	CABLE DETECTION
11	GROUND
12	SDA
13	H.SYNC
14	V.SYNC
15	SCL

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Chapter 6

FRU (Field Replaceable Unit) list

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of AL1916. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE : Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel(http://aicsl.acer.com.tw/spl/). For whatever reasons a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED CERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the local FRU list provided by your regional Acer office to order FRU parts repair and service of customer machines.

NOTE: To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how best to dispose it, or follow the rules set by your regional Acer office on how to return it.

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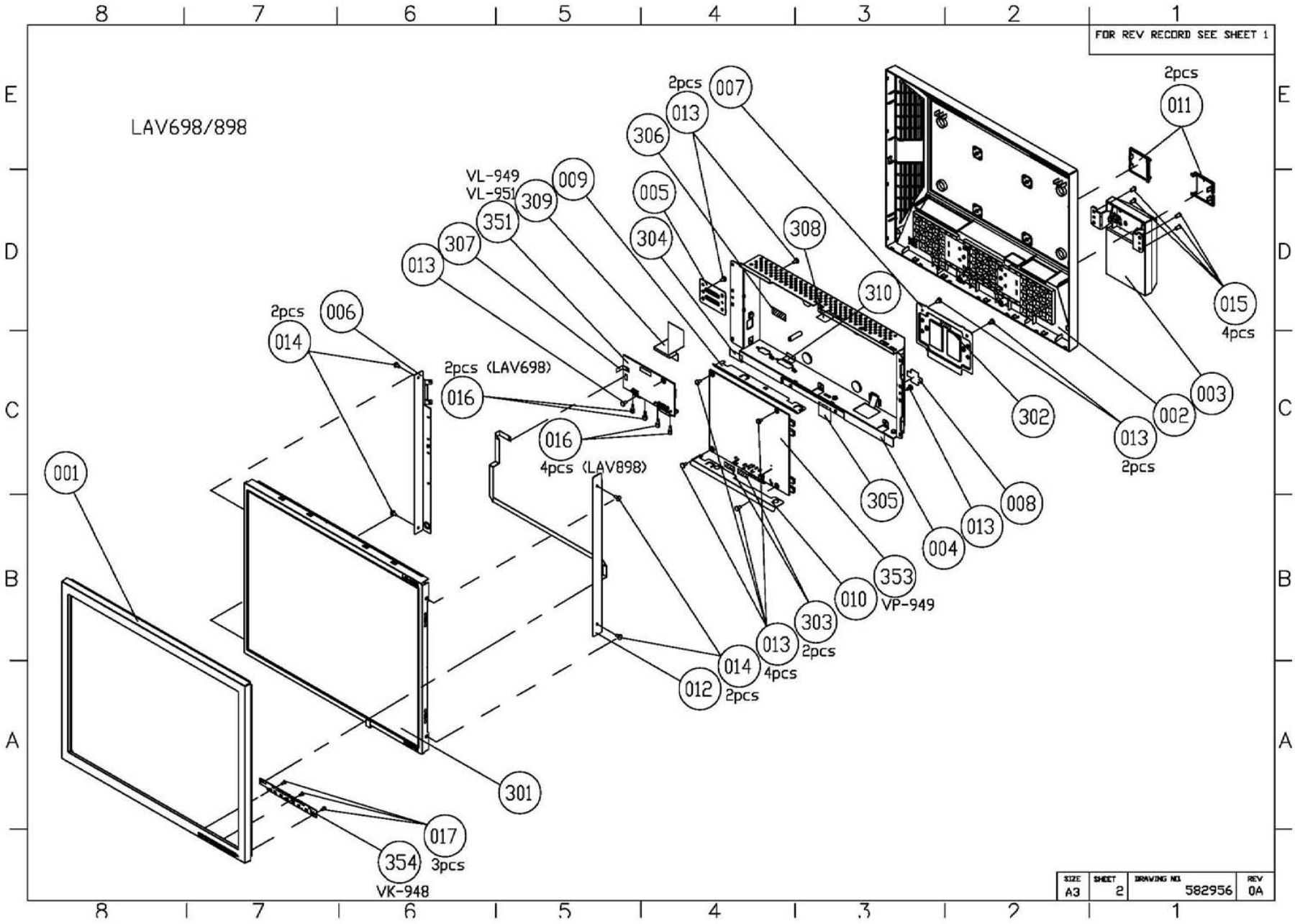

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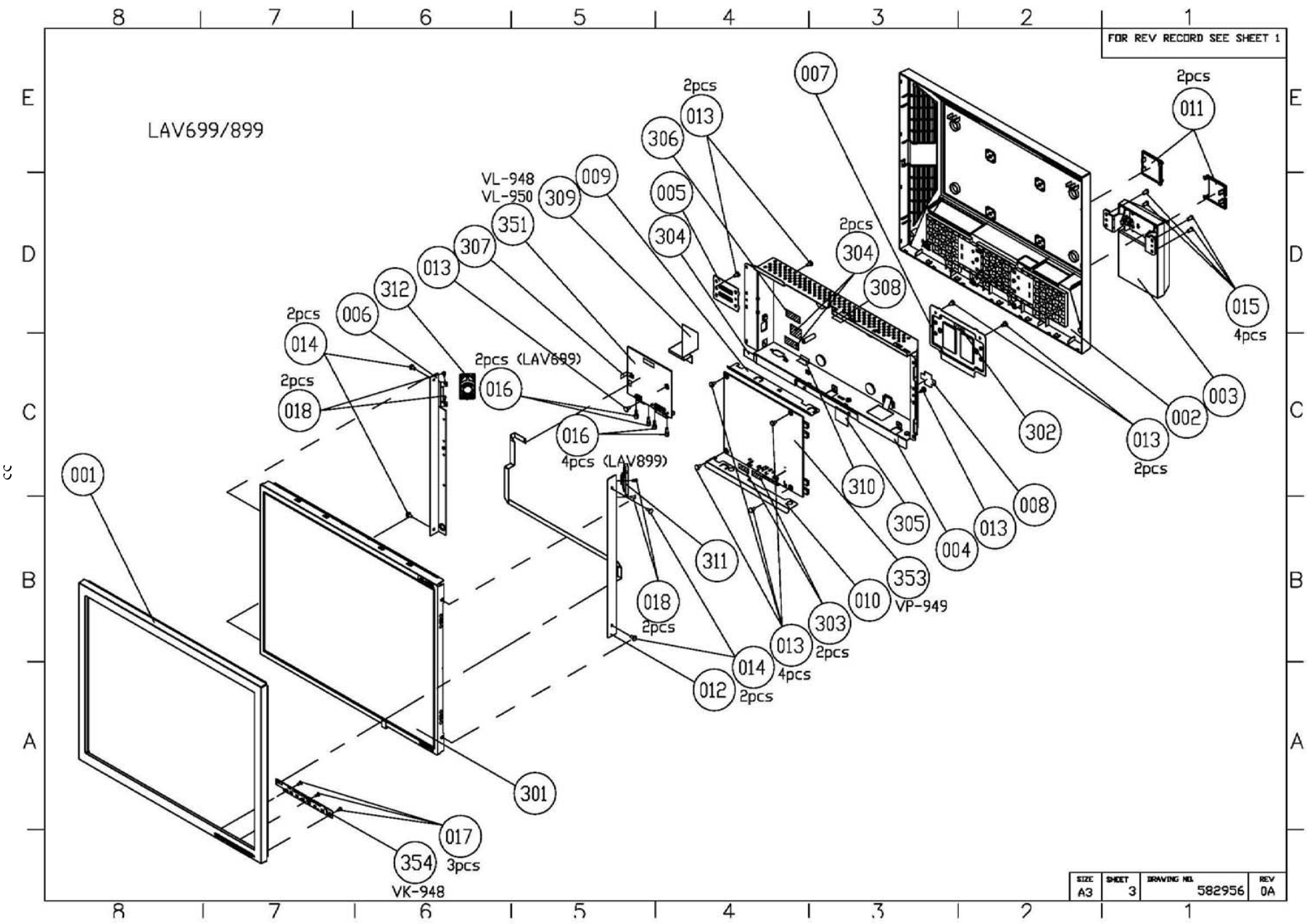

Part list

No.	Photo	Part Name	Description	Part No.
1		BEZEL ASSY(V193)	AV6901 ABS 94HB MBK94GP	APAV690110I
2		Base Assy	AV6905 ABS 94HB MBK94 GP	APAV690500I
3		BACK COVER ASSY (ANALOG) BACK COVER ASSY (DUAL)	AV5203 ABS 94HB MBK94 GP	APAV690300I APAV690310I APAV690320I APAV690330I
4		BUTTON	AV5731 MBK94 ABS 94HB GP	FBAV573100I
6		STAND NECK ASSY(AV698)	AV5715 ABS 94HB MBK94 GP	APAV571520I
7		CHASSIS(DUAL CHASSIS(ANALOG)	VP949+VL949 D-SUB GP	ECAV691100I ECAV691110I ECAV691120I ECAV691130I
8		MYLAR(UPPER) MYLAR(LOWER)	AV5743 FR700 T=0.43MM 94V0 GP AV5744 FR700 R=0.43MM 94V0 GP	ELAV694300I ELAV694400I
9		SOCKET MYLAR	AV5742 FR700 T=0.43MM 94V0 GP	ELAV574200I
10		PANEL BRACKET_L	AV6921 SECC T=0.8MM GP	ECAV692100I
11		PANEL BRACKET_R	AV6922 SECC T=0.8MM GP	ECAV692200I
12		CHASSIS SUPPORT	AV6941 SECC T=0.8MM GP	ECAV694100I
13		HINGE BREAKET (AV698)	AV5732 SGECC T=0.8MM GP	ECAV573210I

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14		HINGE COVER(L/R)	AV5747 MBK94 ABS 94HB GP	FAAV574700I
15		LED LENS	AV5741 PC CLEAR GP	FCAV574100I
16		SCREW	M3X0.5+4I-NI(GP)	FCAV574100I
17		SCREW	M3X0.5+4I-NI(NL)	MAA0000320I
18		SCREW	TPB-2-2.8I (ZK)	MAB0000340I
19		SCREW SPECIAL	4#-40UNCX12.7 WASHER D=5.0 GP	MAAA001933I
20		SCREW	MAB0000540I	MAB0000540I
21		SCREW	M4X0.7+8F-NI GP	MAA1000110I
22		TAPPING SCREW	TPB-4+12I-ZK(GP)	MAB0000120I
23		panel	LM190E08-TLL1 19"A	AC6VG1902R3
24		Function Board	VK-948	454AEN30L11

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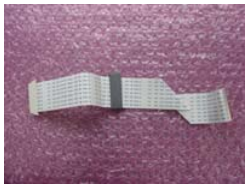
25		Speaker (R/L)	2W 6OHM C4020A R-2P 2W 6OHM C4020A L-3P	CG10021V22I CG10021V23I
26		Power& Inverter Board	VP-949 LAV699GA_7.5mA	453ADS30L11
27		Main board	VL-949 LAV698GA	461AG430L13
28		Main board	VL-951 LAV898GA	461AG630L12
29		Main board	VL-948 LAV699GA	461AG330L12
30		Main board	VL-950 LAV899GA	461AG530L12
31		Main board to LCD Cable	30P G P1PAD0.65 25CM	NBX3010690I

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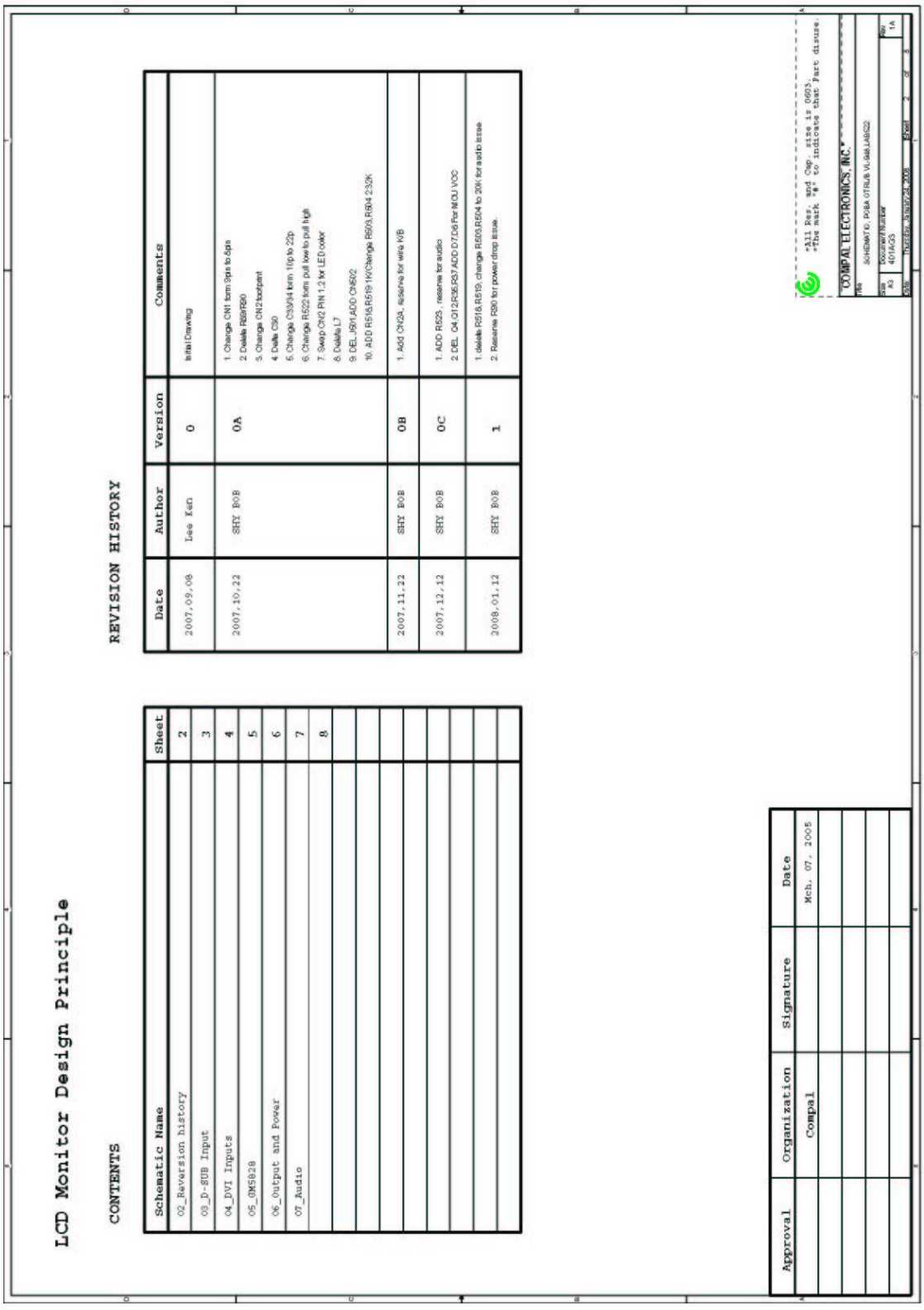
Chapter 7

Schematic Diagram



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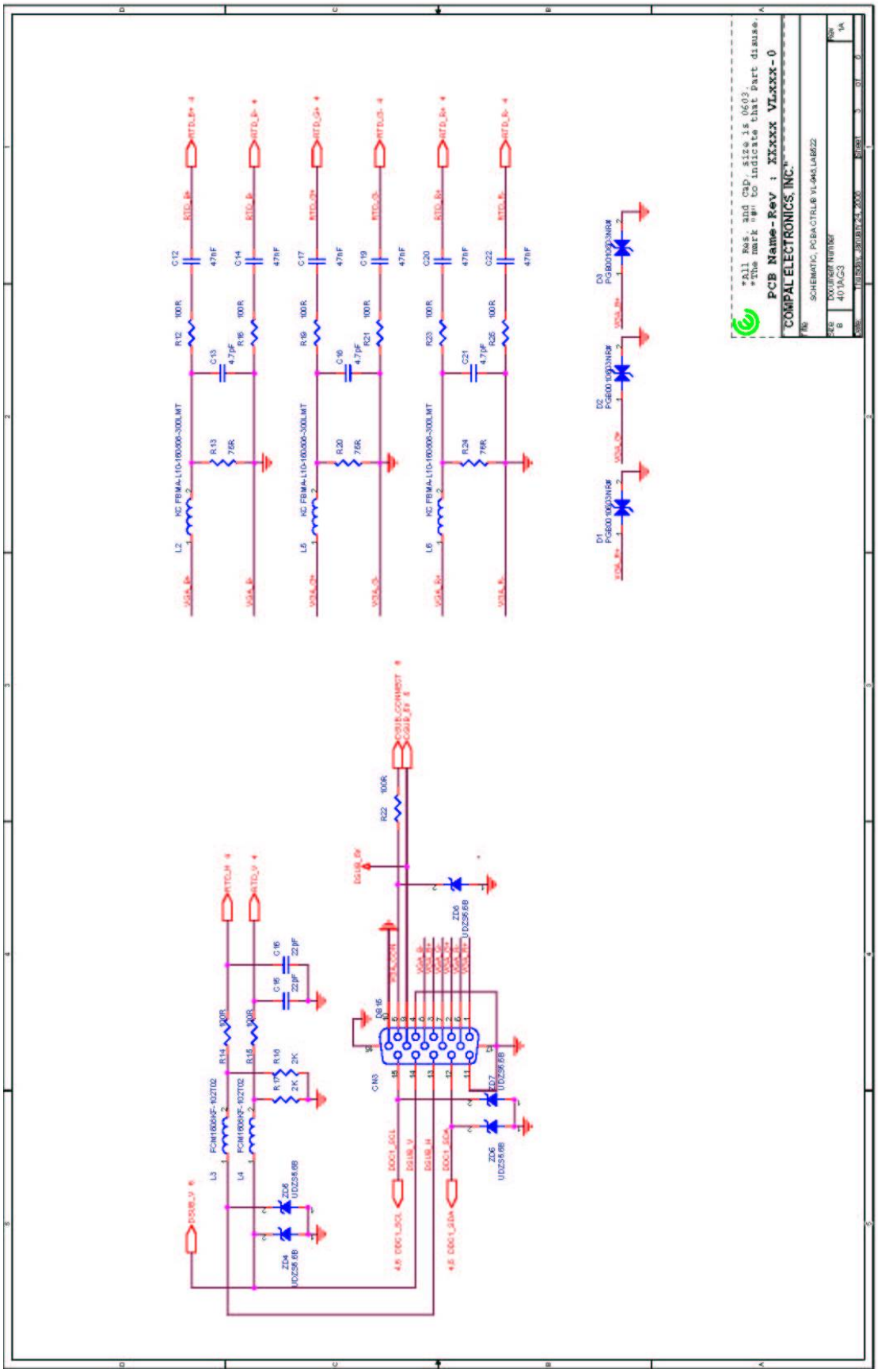
*All Res. and Cap. size is 0603
*The mark "#" to indicate that part diasue.
PCB Name-Rev : XX.xxx VL.xxx-0
COMPAL ELECTRONICS, INC.
SCHEMATIC, PCBA CTRL/6 VL-946 LA-6822
DX0.M/B/R Number
401A/G3
Size: B
Rev: 1A
Date: Thursday, April 24, 2008
Sheet 1 of 6

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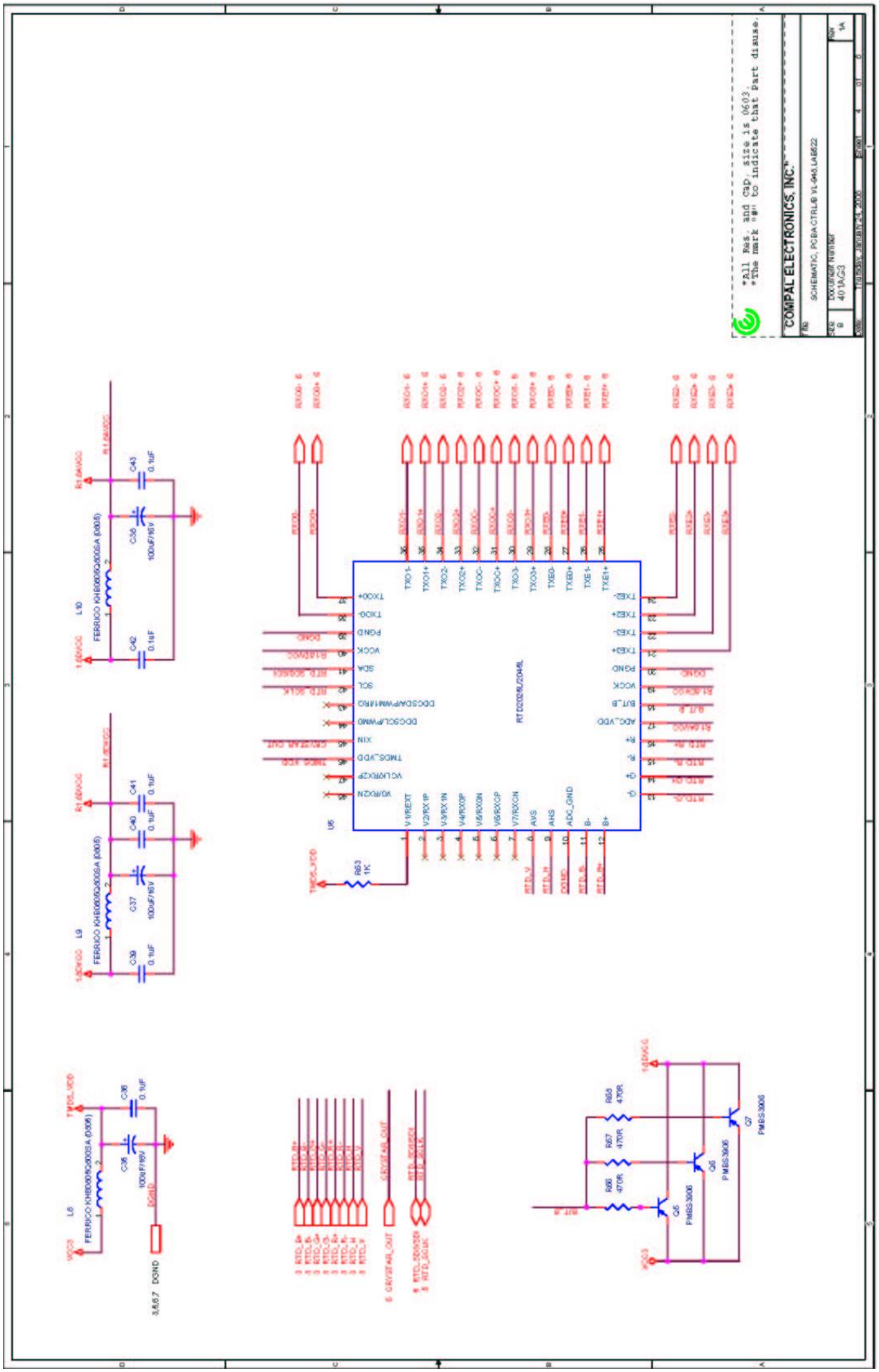

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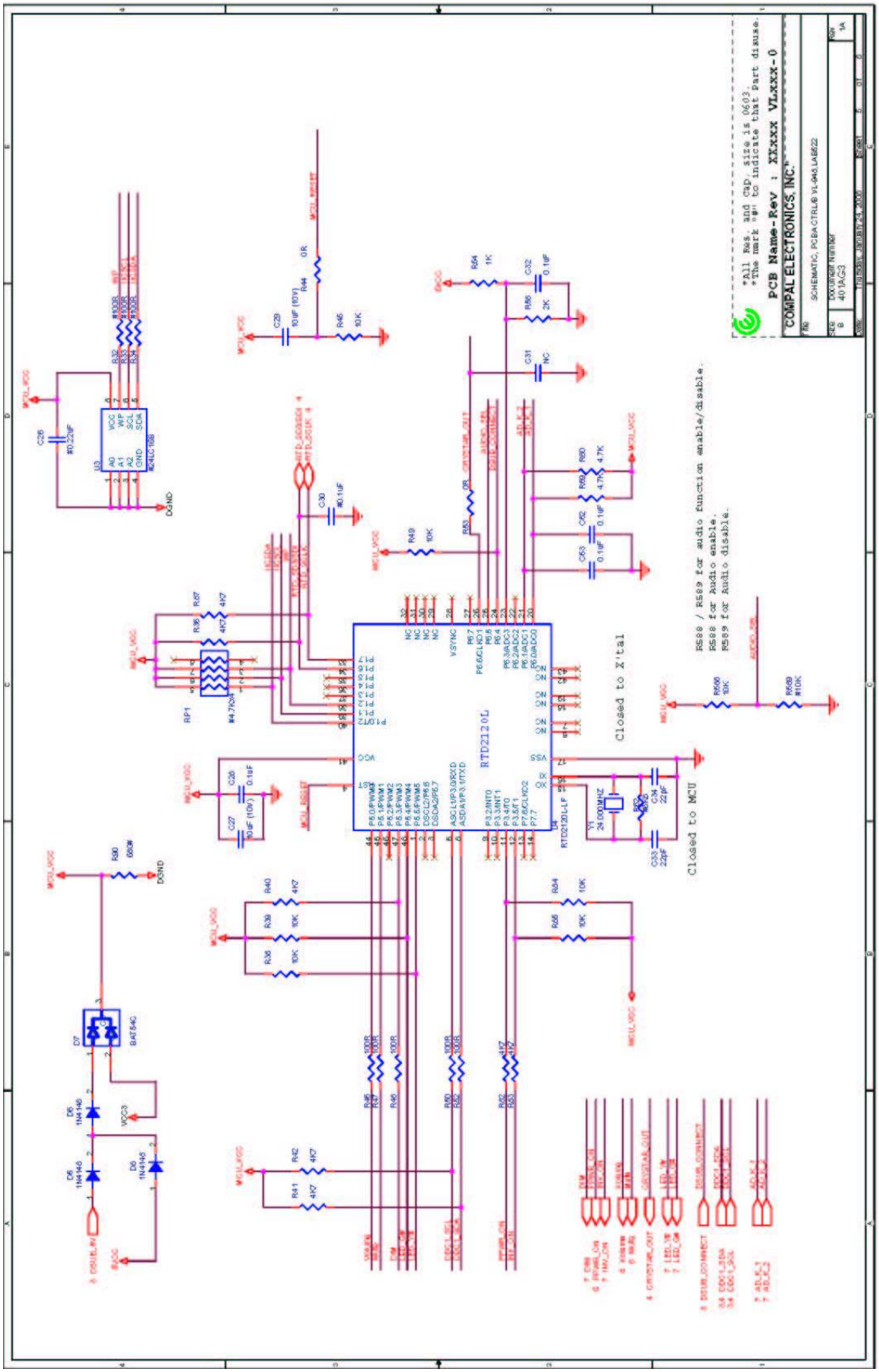

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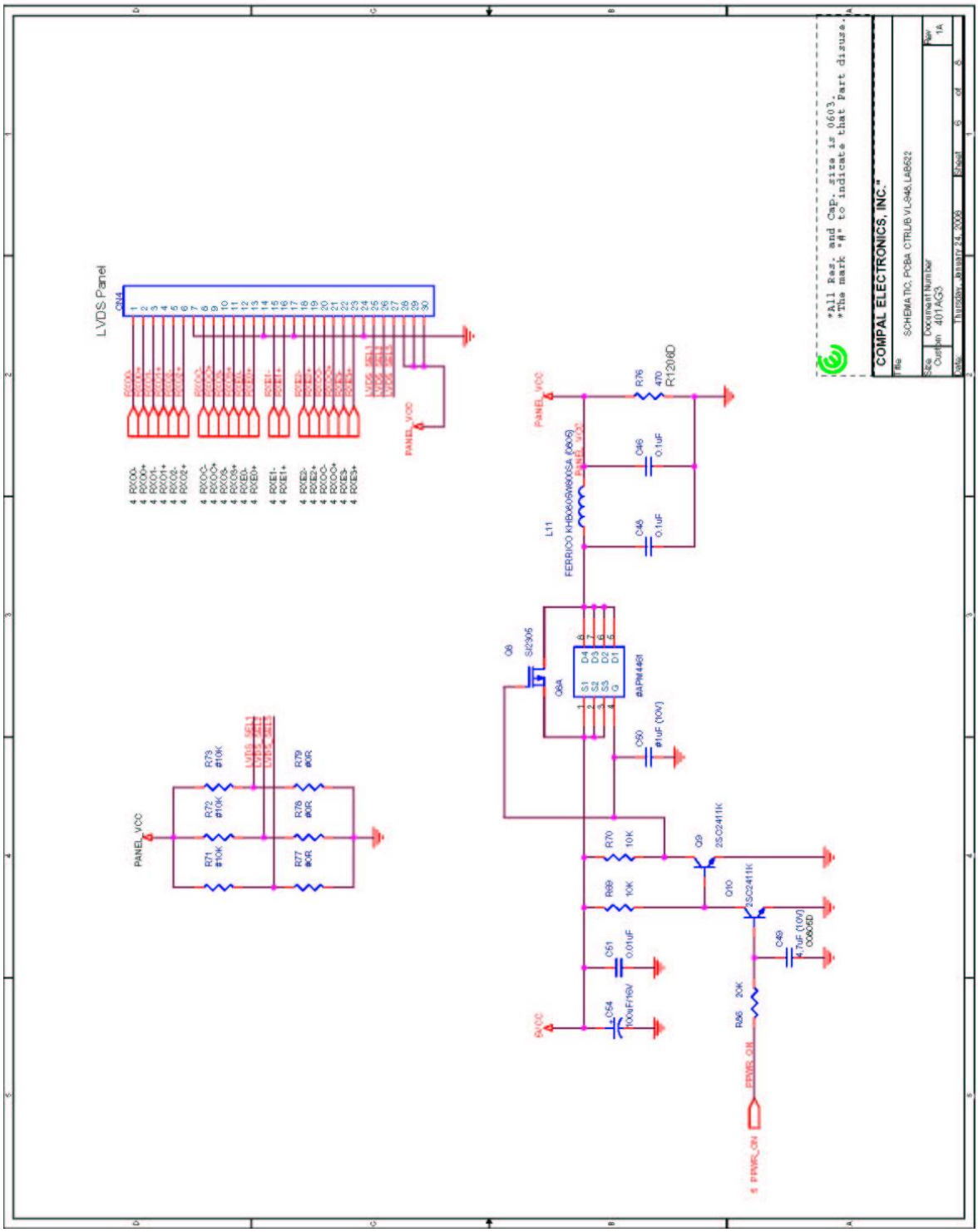

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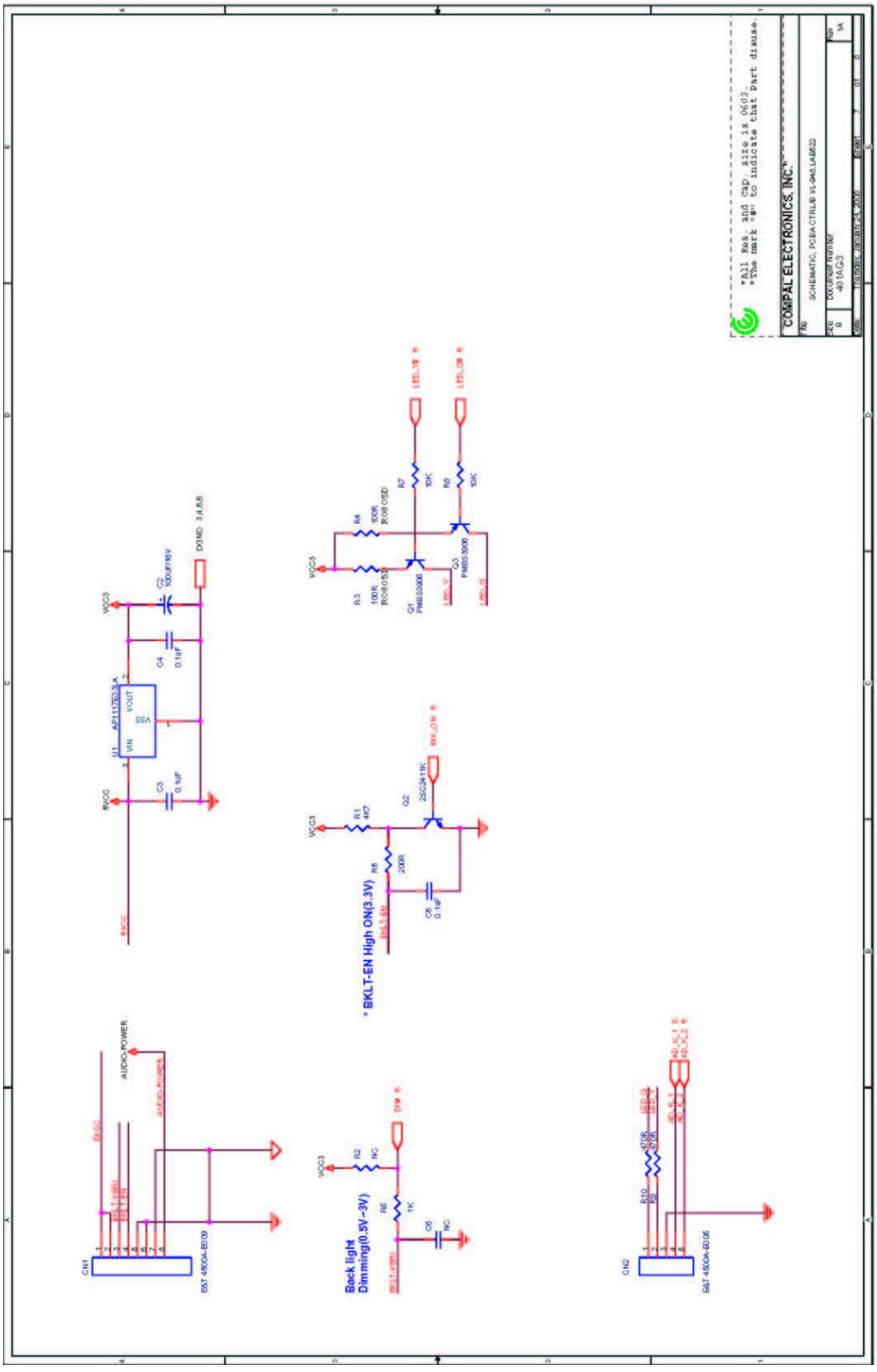

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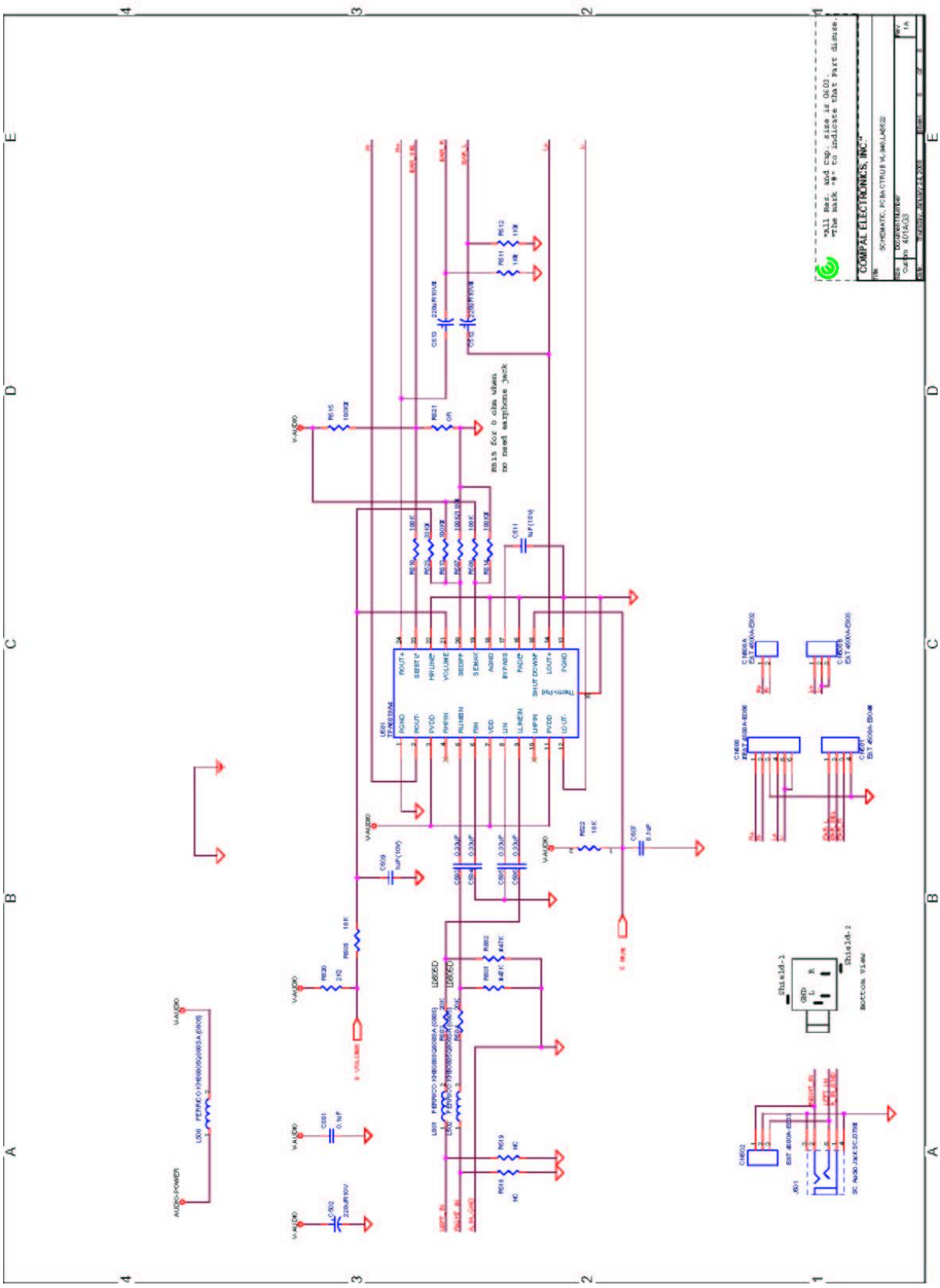

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LCD Monitor Design Principle

CONTENTS

Schematic Name	Sheet
02_Reversion history	2
03_D-SUB Input	3
04_DVI Inputs	4
05_GM5828	5
06_Output and Power	6
07_Audio	7
	8

REVISION HISTORY

Date	Author	Version	Comments
2007,09,08	Lee Ken	0	Initial Drawing
2007,10,22	SHY BOB	0A	1. Change CN1 form 9pin to 8pin 2. Delete R89/R90 3. Change CN2 footprint 4. Delte C90 5. Change C33/34 form 10p to 22p 6. Change R522 form pull low to pull high 7. ADD R208/R210/Q201 FOR HDCP 8. Swap CN2 PIN 1,2 for LED color 9. ADD L1 for EMI,Delete L7 10. ADD R211,R212 FOR HDCP 11. DEL J501,ADD CN502 12. ADD R518,R519 1K/Change R503,R504 2.32K
2007,11,22	SHY BOB	0B	1. Add CN2A, reserve for wire K/B
2007,12,12	SHY BOB	0C	1. ADD R523 , reserve for audio 2 DEL Q4,Q12,R35,R37,ADD D7,D8 For MCU VCC
2008,01,12	SHY BOB	1	1. delete R518,R519, change R503,R504 to 20K for audio issue 2. Reserve R90 for power drop issue.

Approval	Organization	Signature	Date
	Compal		Mch, 07, 2005

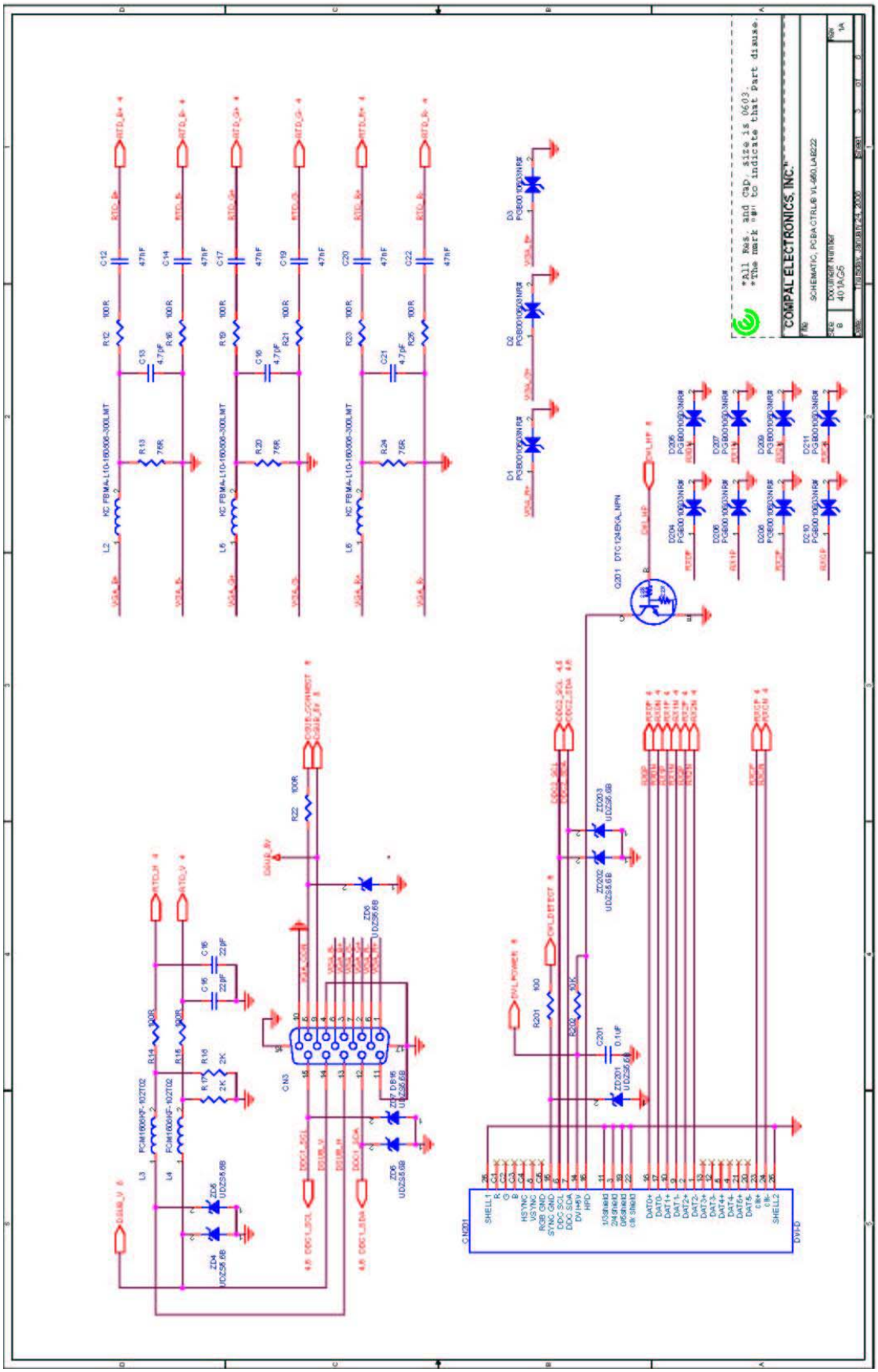
*All Res. and Cap. size is 0603.
*The mark "#" to indicate that Part disuse.

COMPAL ELECTRONICS, INC.

Title: SCHEMATIC, POBA 0TRL/B VL-948,LA8222

Size: A3 | Document Number: 401AG5 | Rev: 1A

Date: Thursday, January 24, 2008 | Sheet 2 of 8



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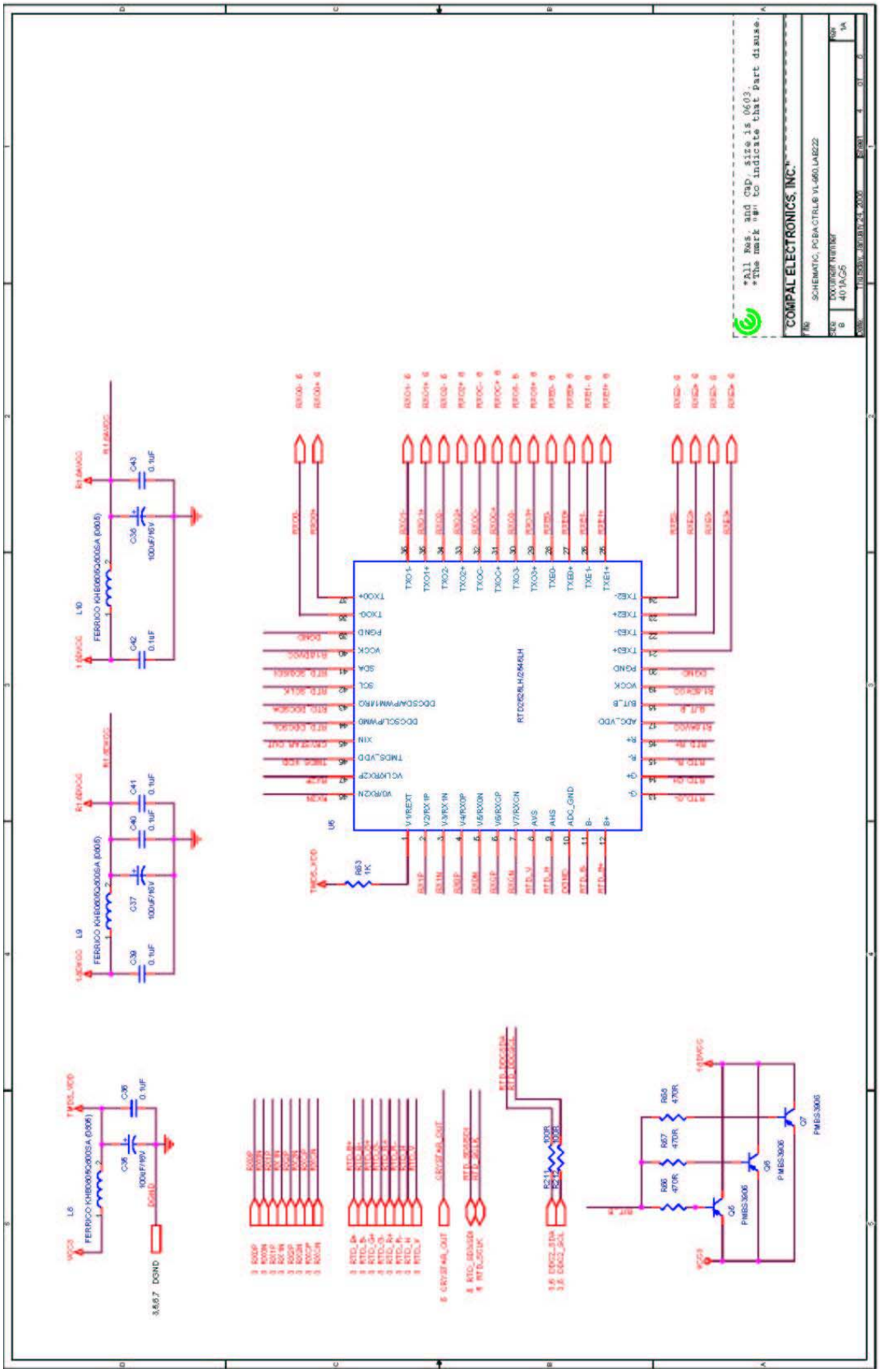

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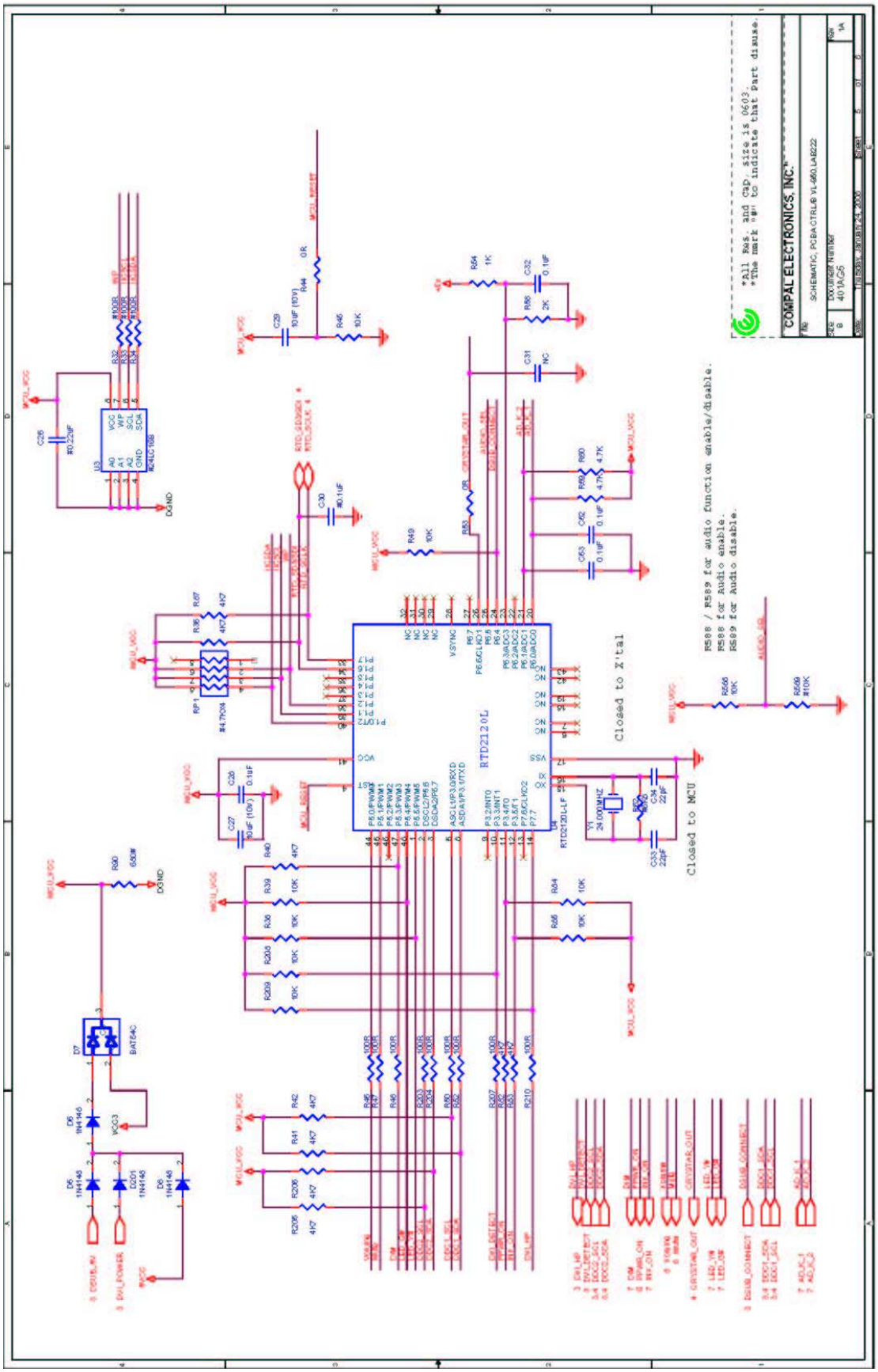

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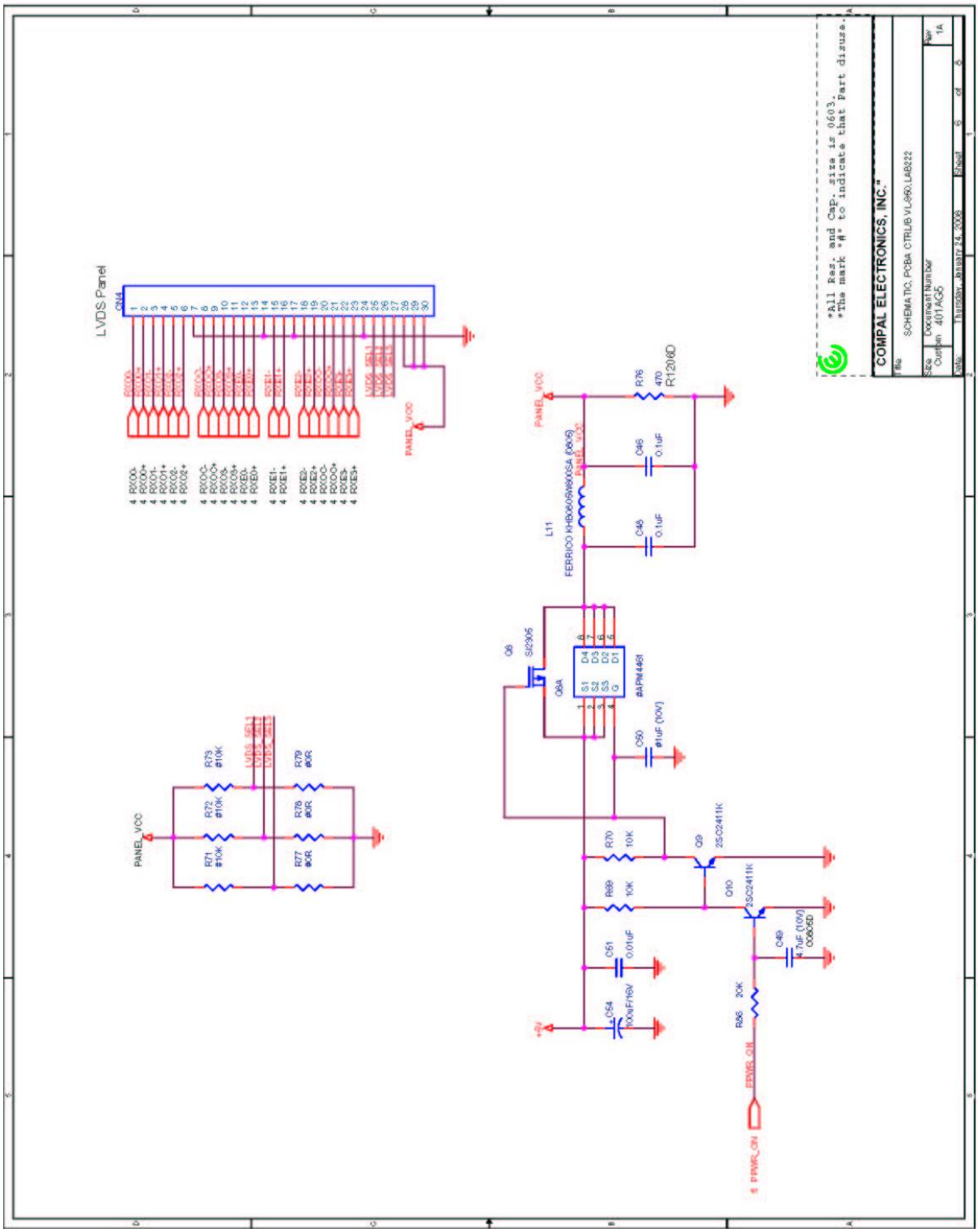

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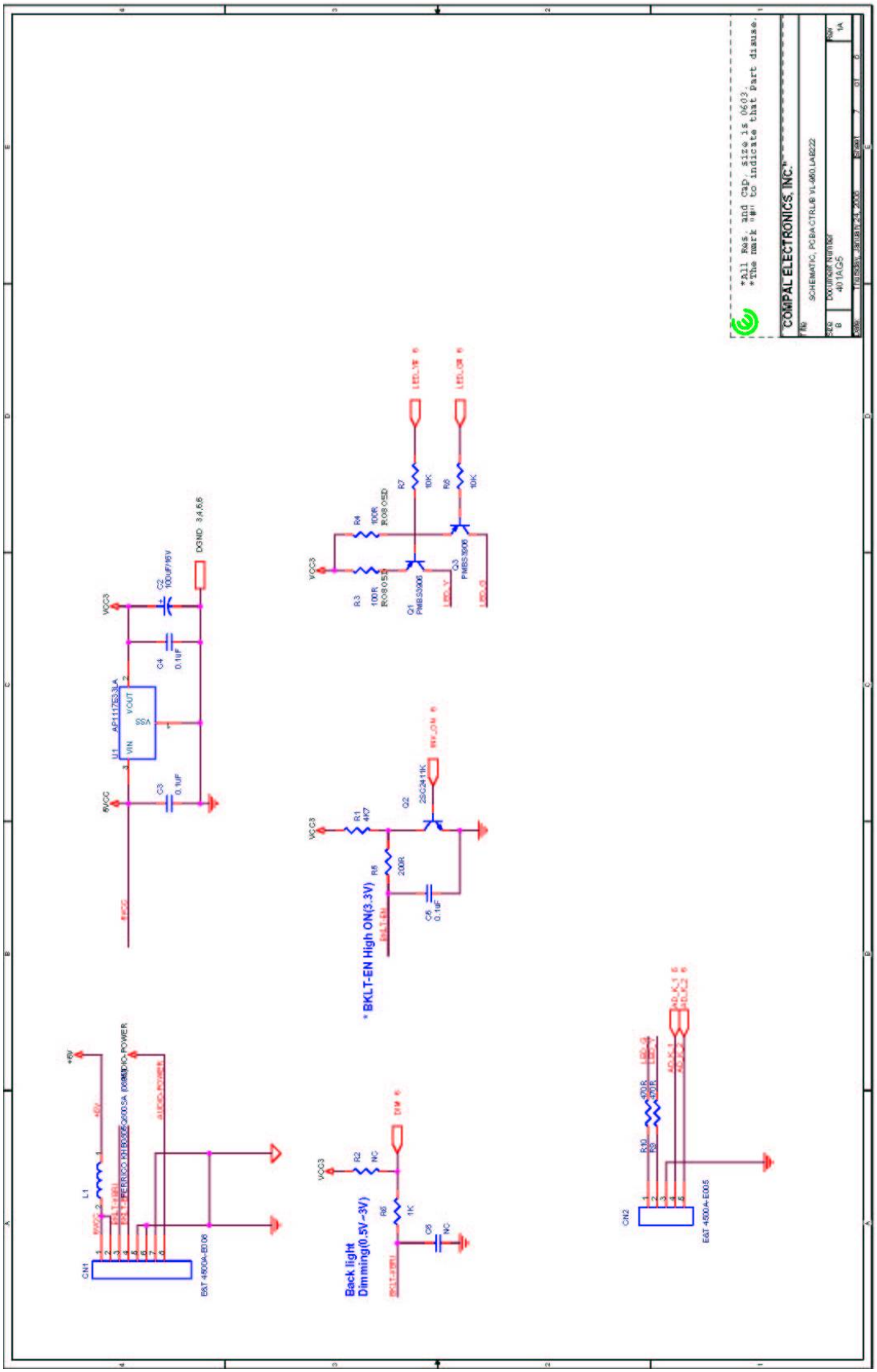

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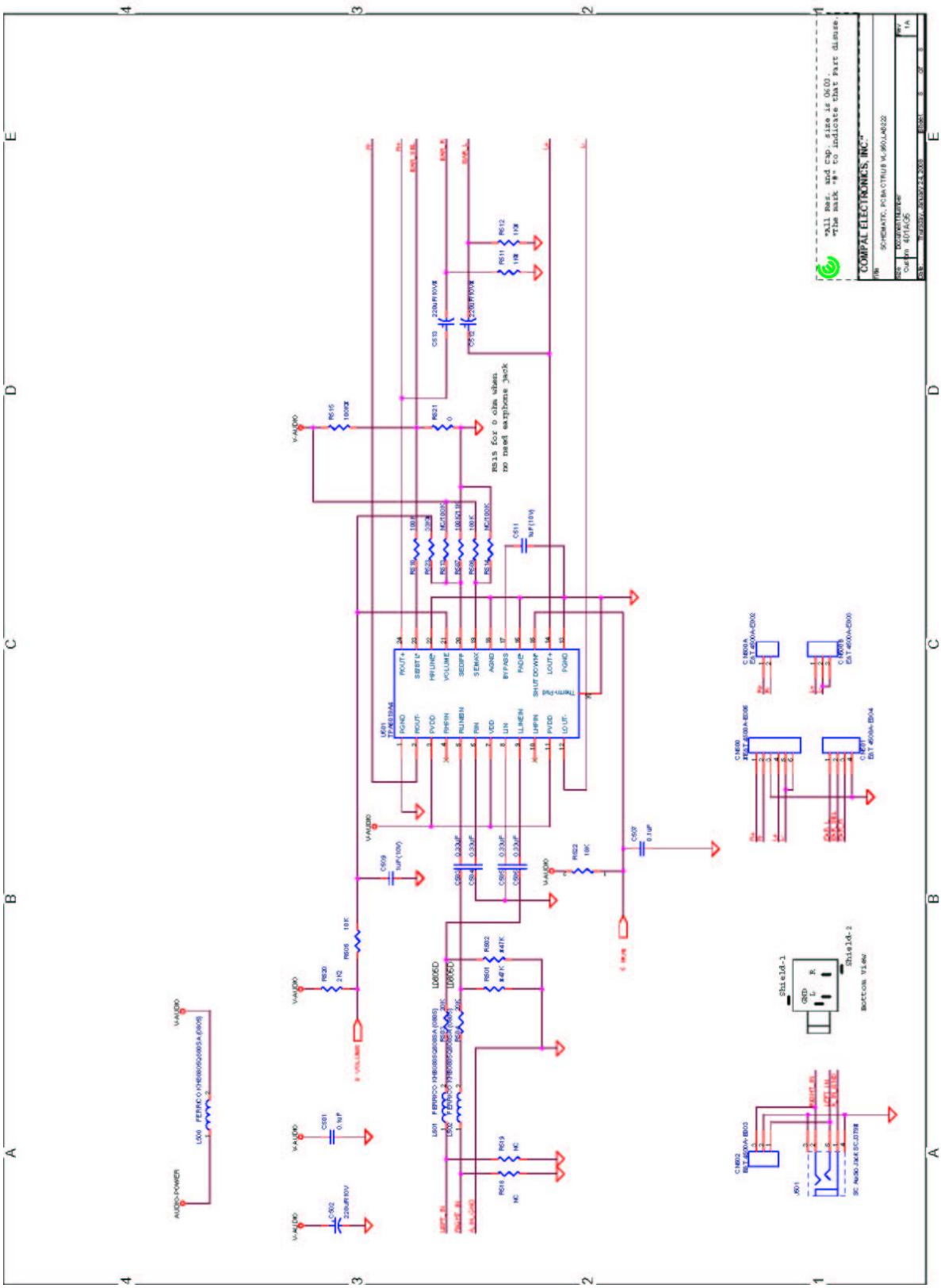

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LCD Monitor Design Principle

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03_D-SUB Input	3
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07_Audio	7
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REVISION HISTORY

Date	Author	Version	Comments
2007,09,08	Lee Ken	0	Initial Drawing
2007,10,22	SHY BOB	0A	1. Change CN1 form 9pin to 8pin 2. Delete R89/R90 3. Change CN2 footprint 4. Delte C30 5. Change C33/34 form 10p to 22p 6. ADD R208/R210/Q201 FOR HDCP 7. Swap CN2 PIN 1,2 for LED color 8. ADD L1 for EMI,Delete L7 9. ADD R211,R212 FOR HDCP
2007,12,22	SHY BOB	0B	1. Change CN1 form 8pin to 6pin 2. DEL Q4,Q12,R35,R37,ADD D7,D8 For MCU VCC
2008,01,14	SHY BOB	1	1. Reserve R90 for power drop issue.

Approval	Organization	Signature	Date
	Compal		Mch, 07, 2005

*All Res. and Cap. size is 0603.
*The mark "#" to indicate that Part disuse.

COMPAL ELECTRONICS, INC.

Title: SCHEMATIC, PCBA CTRL/B VL-951,LA8228

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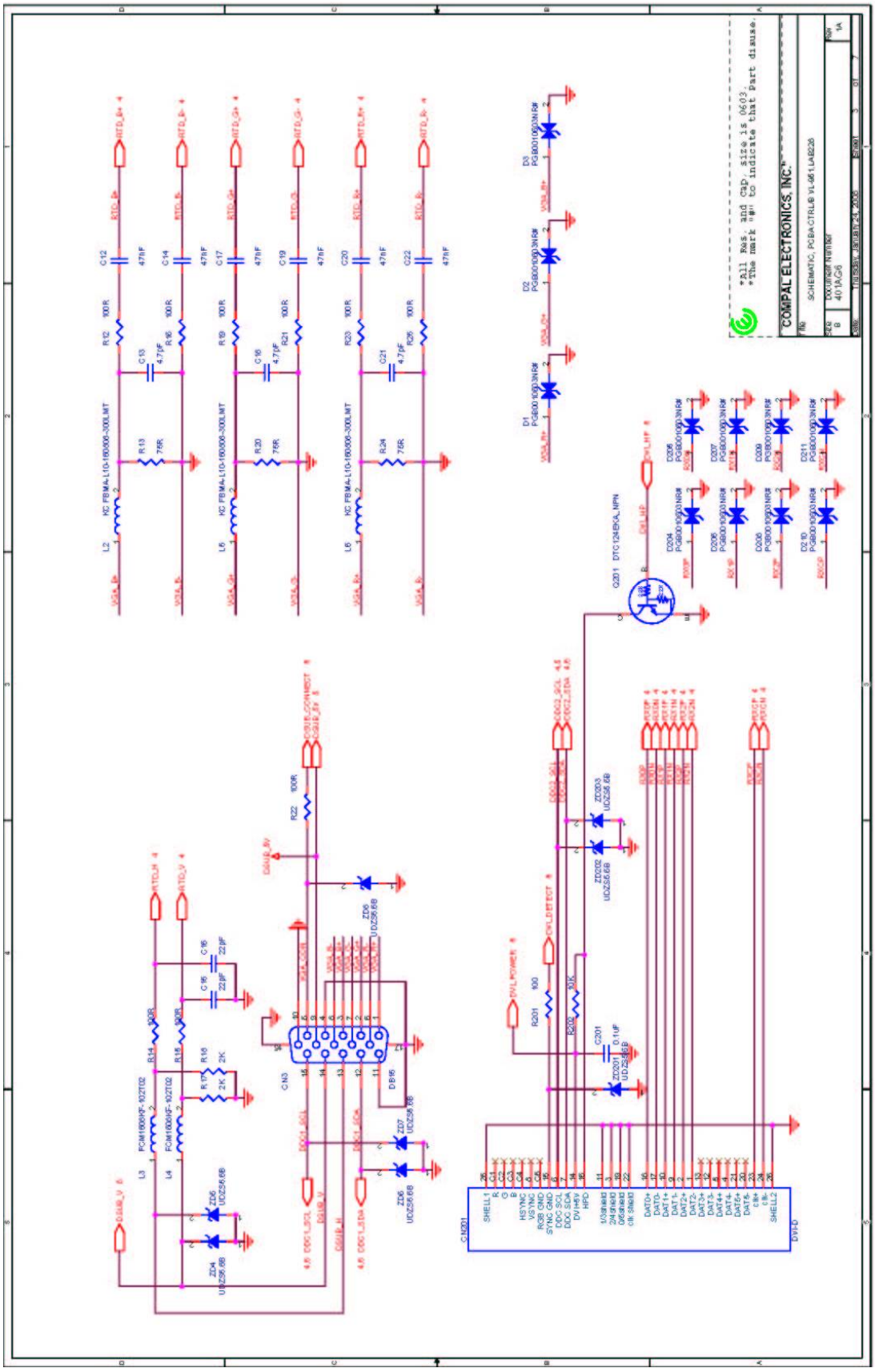

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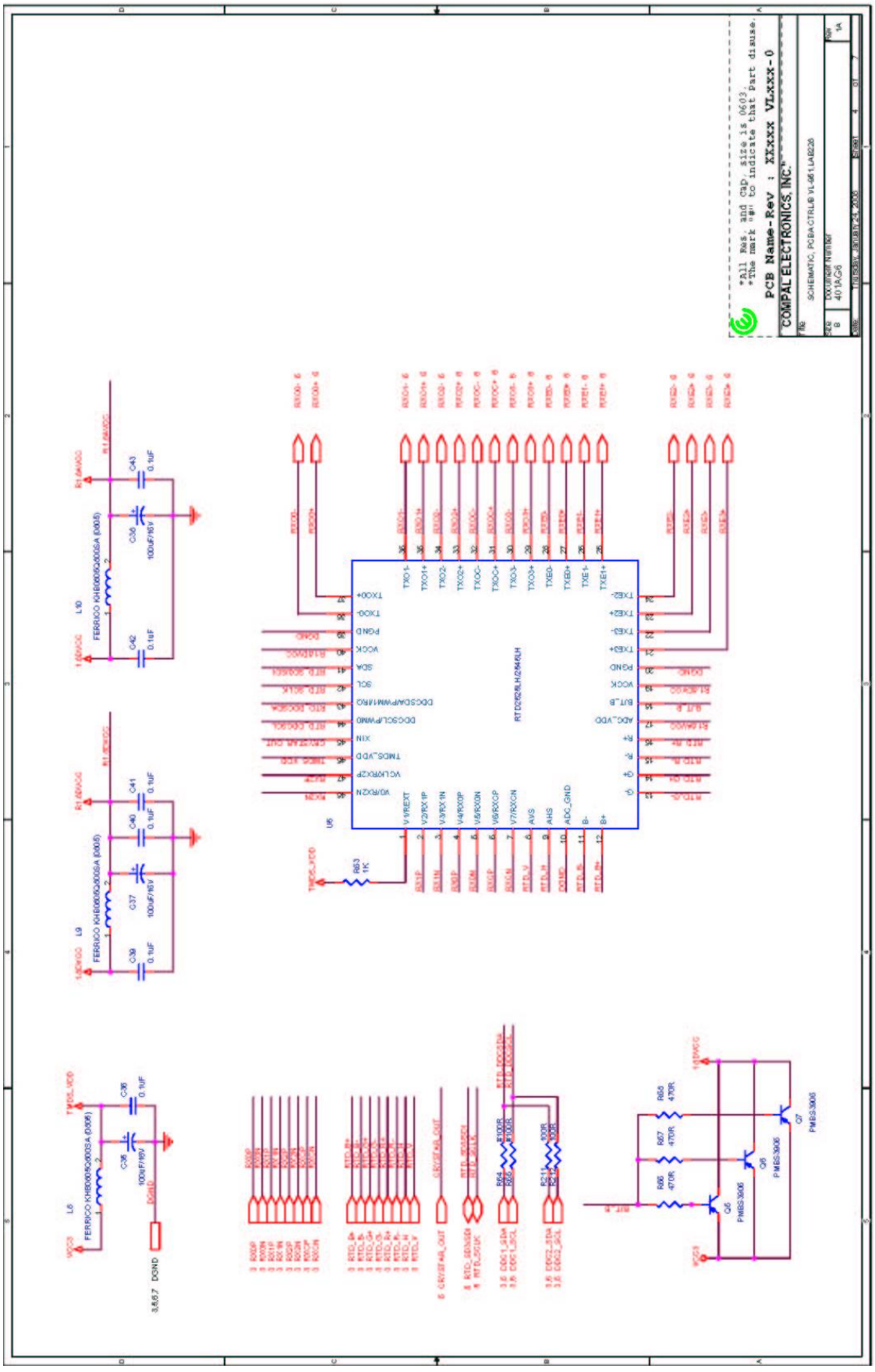

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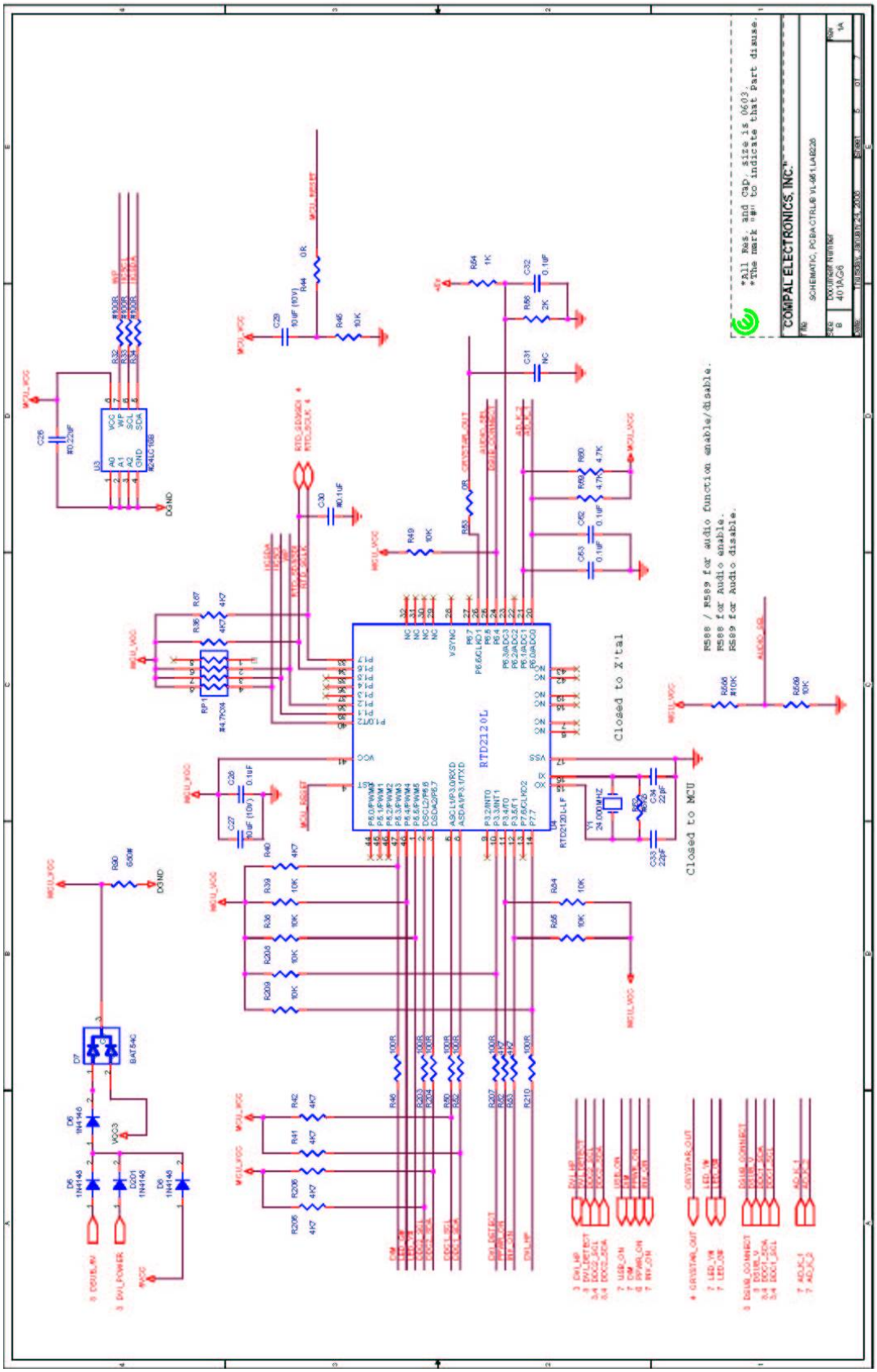
COMPAL ELECTRONICS, INC.
SCHEMATIC, PCBA:CTRL@ 91.4I615.LA8
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401AG6
Rev
1A
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*All R's and C's' size is 0603.
*The mark '#' to indicate that part disuse.
R588 / R589 for audio function enable/disable.
R588 for Audio enable.
R589 for Audio disable.
Closed to X'tal
Closed to MCU
RTD2120L
RTD2120D-LF
24.000MHZ
BAT54C
1N4148
1N4946
MCU_VCC
DGND
VDD33
VCC
WP
SCL
SDA
GND
24C16/08
R588
R589
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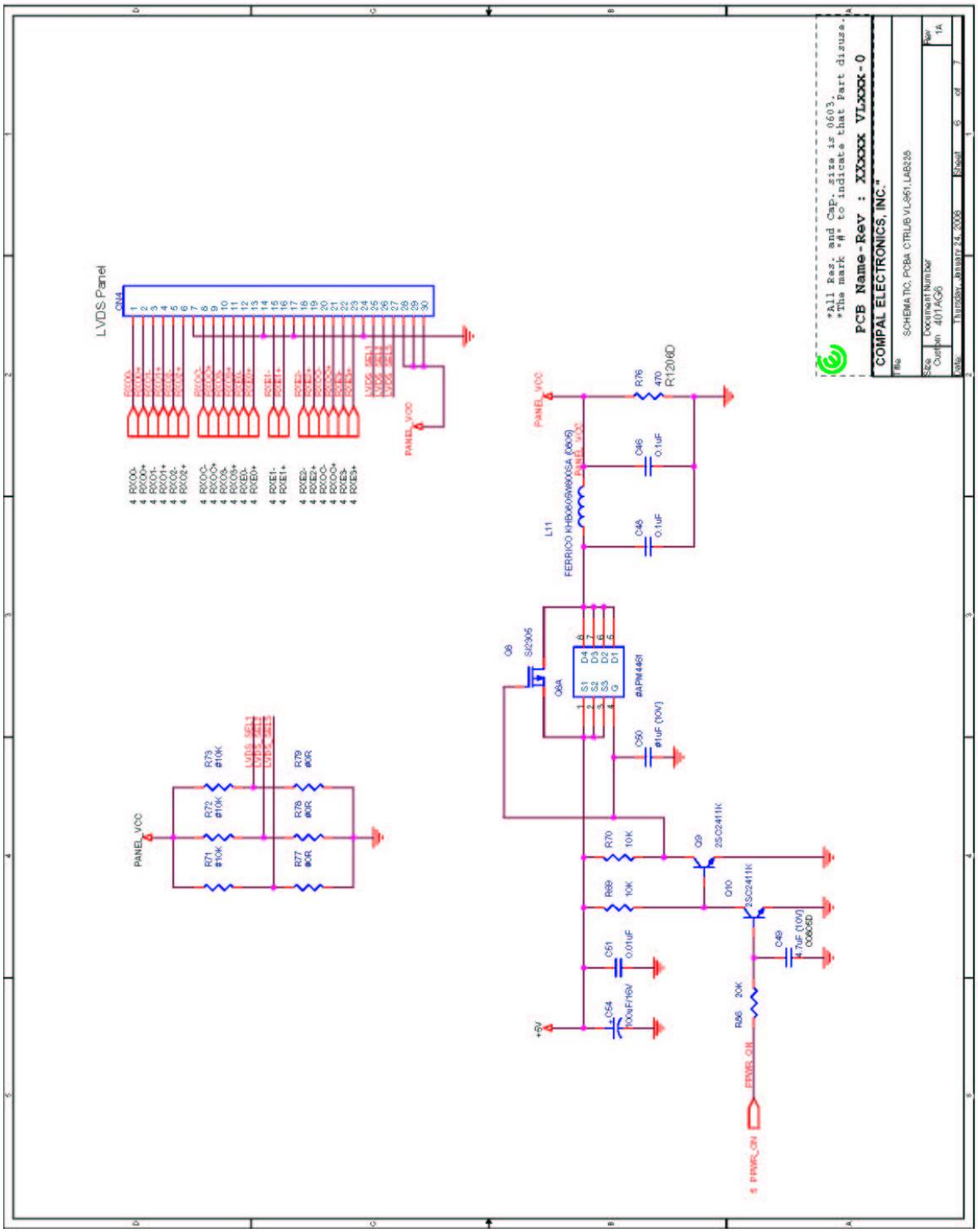

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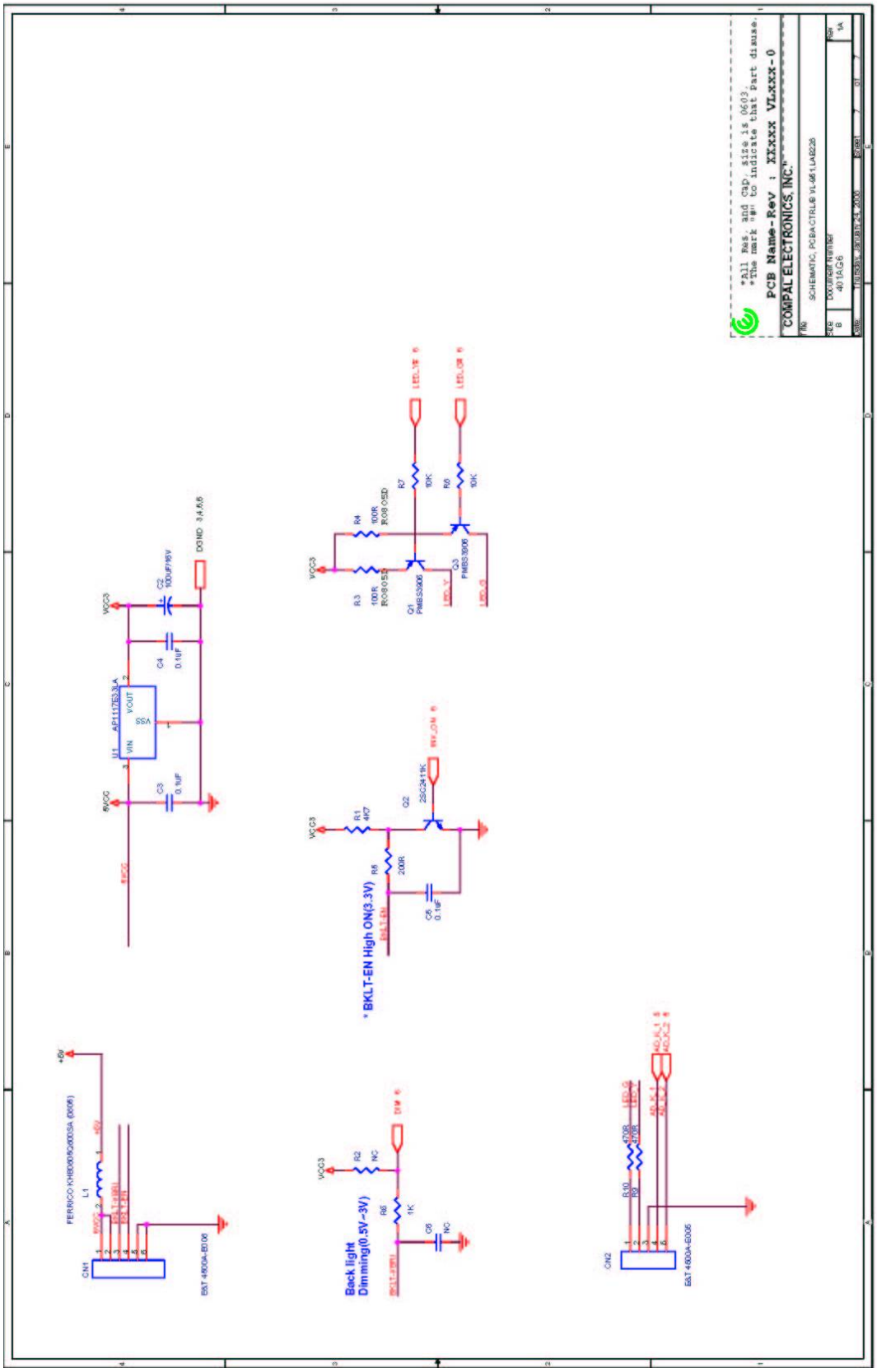

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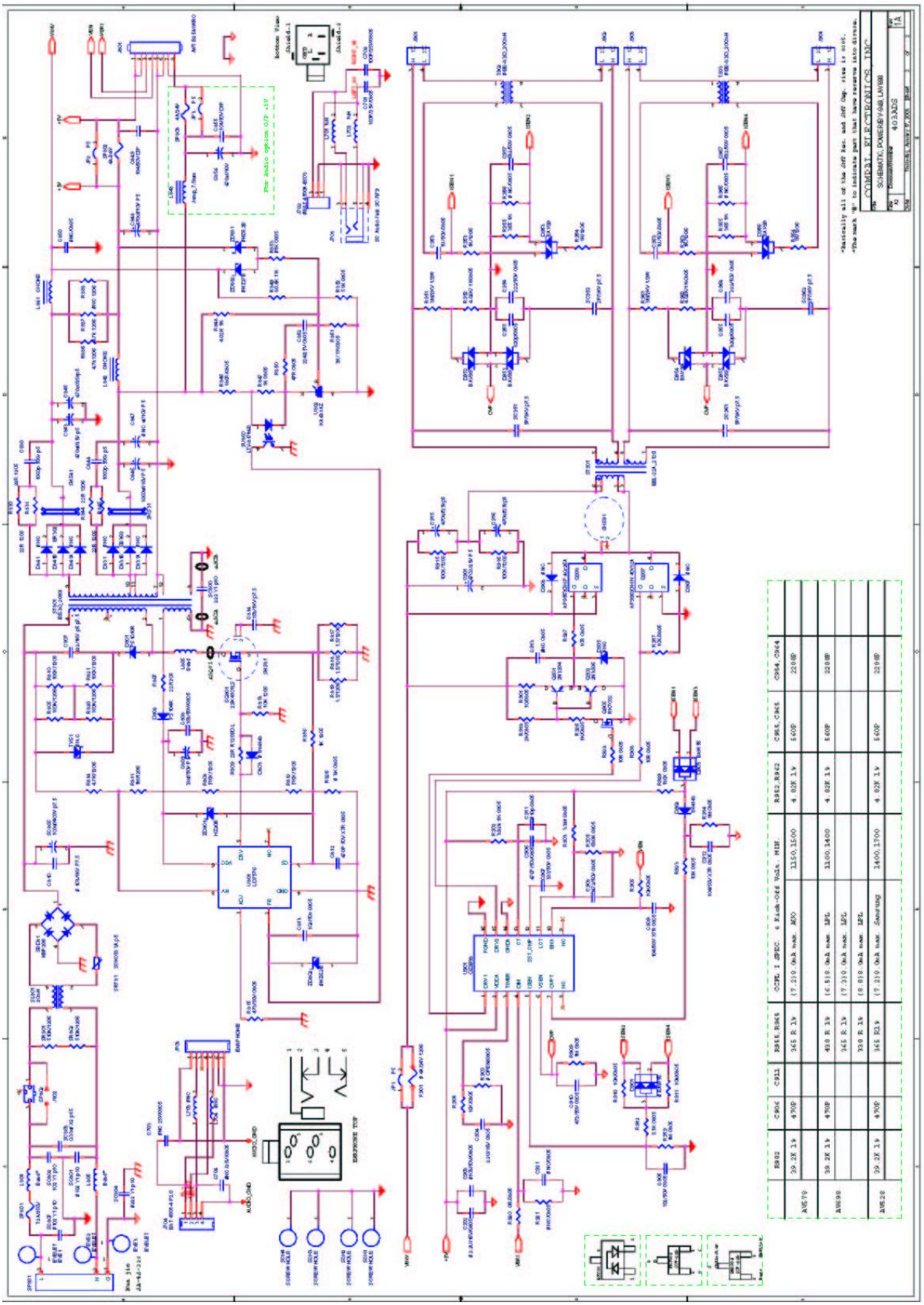

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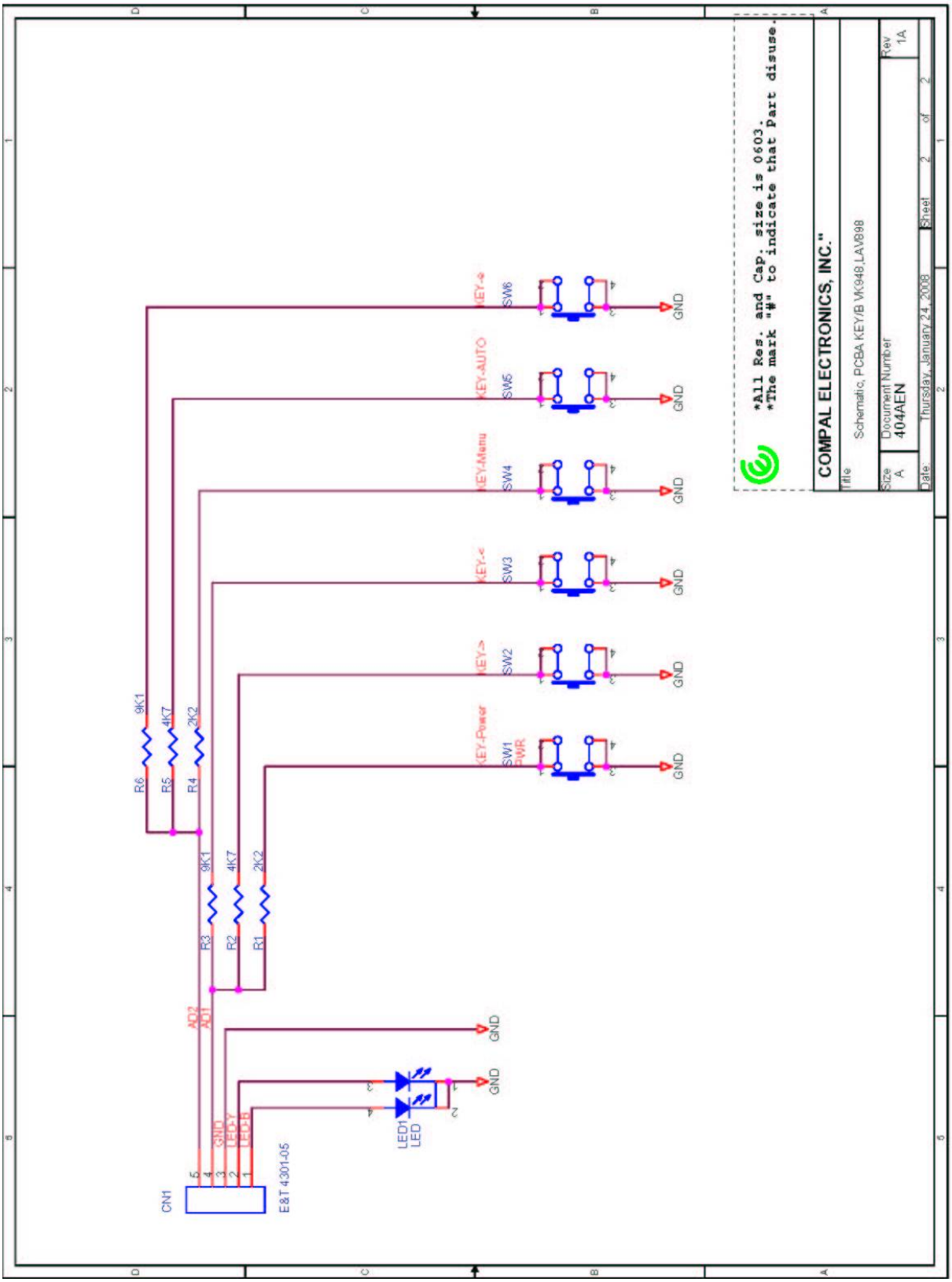

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